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GLEANNINGS

IN BEE CULTURE

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THE A. I.
MEDINA



ROOT CO.
OHIO

U.S.A.

Eastern Edition

Entered at the Postoffice, Medina, Ohio, as Second-class Matter

Root's Bee-keepers' Supplies at Convenient Distributing Points.

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Alabama--J. M. Jenkins, Wetumpka, Ala.
California--Calif. Nat'l Honey-producers' Ass'n, Los Angeles; Madary Planing Mill, Fresno, Cal.

Colorado--The L. A. Watkins Mds. Co., Denver, Col.
Oregon--Portland Seed Co., Portland, Ore.
Texas--D. M. Edwards, Uvalde, Tex.

The A. I. Root Company, : Medina, Ohio.

GLEANINGS

IN BEE CULTURE

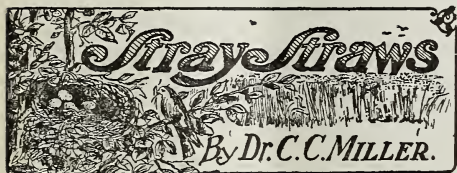
A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS

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No. 19



YE EDITOR, p. 961, expresses surprise at so much swarming with two or three story extracting colonies, which, he says, usually will not swarm. Allow me to suggest one thing that makes a difference — a big difference. Ventilation. With a good-sized entrance to each story, I should expect practically no swarming in this locality. Generally have a few such colonies, and not one has ever swarmed.

SHIPPING-CASES are spoken of by Bro. Doolittle, p. 970, as having glass on two sides. I supposed that nowadays shipping-cases generally had glass on only one side. How is that, Mr. Editor? [Shipping-cases were formerly made with glass on both sides by supply manufacturers; but in these latter days I think only one side is glassed. There are not many using double glass now, and very likely Bro. Doolittle is in the minority. — Ed.]

THE QUESTION is raised, page 955, whether it might not have been all right to postpone the National convention at San Antonio till after the first frost. Granting that railroad rates would have been all right at that time, people don't get over a yellow-fever scare in a day; and the many who have decided not to go on that account Oct. 31 would take more than one frost to get them over the scare. At least that's the way it is "in this locality."

G. M. DOOLITTLE, page 970, says he ships his fancy and his No. 1 honey to two different houses, so the two can not be closely compared. But in that case he must be sure to ship his No. 1 where *no one else* ships fancy, for it would be just as bad to have the No. 1 compared with Smith's fancy as with Doolittle's fancy. But isn't that a

difficult thing to do, since most commission houses receive at all times honey from any one who offers, and generally have on hand different grades?

"THE SHALLOW brood-nest, as Mr. Heddon so clearly explained years ago, offers exceptional facilities for getting all the bees off the combs without touching a single comb," page 960. Say, Mr. Editor, do you really make a practice of shaking all the bees out without touching a comb? [The word *all* should have been omitted. The mistake was overlooked in the proof-reading on my part. Of course, it would not be practicable to shake *all* the bees off the combs without touching *one*. — Ed.]

PROF. BIGELOW, p. 958, makes a strong plea for tanging; but when he's all through I'd like to know whether he really thinks tanging advisable. He says: "The noise is made *after* the clustering, in my experience, when the swarm has refused to go into the hive or to remain." Beg pardon, professor, I suspect the general experience is different from yours. Certainly, in any case I ever knew any thing about, the music began the earliest possible after the swarm was known to be issuing, and I never read of any different experience till I read of yours.

J. E. JOHNSON, p. 959, speaking of Hoffman frames, says: "If you get well-made combs to start with, and always shove them up tight, using the dummy, nobody can help liking them." Then I'm that "nobody," friend Johnson; for after fulfilling the conditions you specify, I most assuredly "can help liking them," and very much prefer frames with smaller points of contact. [Propolis is a factor to be considered. You have more propolis in your locality, I believe, than we have here; but if you had no more than we, I am sure you could learn to handle these frames as easily as we do ours. — Ed.]

J. W. SOUTHWOOD files a protest against the impression left by the item headed "An Increase in Weight of Two Pounds in a Minute and a Half," p. 919. The surface impression is that during that minute and a half two pounds of nectar were carried into the hive. Mr. Southwood wisely hints that

but a small part of that two pounds may have been nectar, being nearly all bees. Color is given to that view by the expression, "then a storm caught us." A sudden clouding up, an inrush of bees, and none going out, and there would be a rapid accession of weight, even though not a drop of nectar was coming in. [Mr. Southwood's point is well taken.—Ed.]

FOR LATE FEEDING, 2 parts of sugar and 1 of water, page 955, wouldn't it be just as well to have $2\frac{1}{2}$ of sugar to 1 of water, as in A B C? Remember, it's *late* feeding. [There will practically be but little difference between the $2\frac{1}{2}$ and 2. I merely spoke of two parts of sugar as being an easy thing to remember. If you will refer to late editions of the A B C I think you will find we prefer numbers 4 to 3 and 1 to 1. If there is a possibility of the bees ripening it I should prefer to give the thinner syrup. Years ago, when we had the $2\frac{1}{2}$ proportion, we had a good deal of sugar go into crystals in the combs; but in later years we use nothing stronger than equal parts, and feed early.—Ed.]

AS HAVING a possible bearing on the paper-section question, p. 959, I may mention that I have had, from Germany, I think, a sample of paper queen-excluder, the paper appearing to be so treated that bees would not gnaw it. But even if cheap enough to be used for queen-excluders it might be quite too expensive for section boxes. [I can not conceive of any kind of paper excluders that would for all time resist the gnawing on the part of the bees like zinc. When it comes to a matter of sections, there is urgent need of a cheaper material because of the *quantity* of lumber required. But in the line of excluding-boards the amount of material used is very small comparatively, and that material will last a lifetime; hence I can see no advantage in trying to cheapen queen-excluders by trying to use some other material than zinc.—Ed.]

EDITOR ROOT is of the opinion that farmers or beginners should have a frame that will space automatically and exactly right, p. 954. Yes, and so should others, at least until they have had 40 years' experience, or more. Mr. Hutchinson, page 953, seems to think he doesn't need automatic spacing, for he has in his "mind's eye" a $\frac{5}{8}$ measure which he uses "when putting the frames in the hive, just as the self-spacers would use nails driven into the sides of the frames." Now look here, friend Hutchinson, I suspect I have spaced more loose-hanging frames than ever you did, and probably had as good a $\frac{5}{8}$ measure in my mind's eye; and one of the things that I *know* is that I can't begin to work that $\frac{5}{8}$ measure with the same rapidity nor with the same exactness as the spacing-nails. You say it often happens that the ability to make a variation of $\frac{1}{4}$ inch is an advantage; to which may be added that much oftener it is a disadvantage.

IT DAZED ME when I read, p. 964, that if dead bees would not clog the entrance you

would prefer an entrance, Mr. Editor, not more than one inch wide and $\frac{1}{4}$ high, for outdoor wintering. That would be only $\frac{1}{4}$ of a square inch, and I had supposed that would be entirely too little. But your experience greatly exceeds mine, and I am thankful to be corrected. Now, if such a small entrance is desirable providing it can be kept open, how would it do to have it two or three inches above the bottom, giving plenty of room for the dead bees to fall to the floor without clogging the entrance? [Having the entrance a little above the bottom might help the matter somewhat; but not having tried it I suspect that a good many bees would come to the entrance and become chilled, dying because of their low vitality. I feel very sure of this: We need no more entrance than will allow of the slight renewing of the air and the egress of certain bees whose diseased condition would be a menace to the well ones or to the stores left in the hive. I am of the opinion that stores soiled with dysentery have a tendency to bring on dysentery on the part of bees that would otherwise be healthy if they could have clean stores.—Ed.]



Look out now for the colonies that need feeding. A great many, especially of the new swarms, will need help or they will starve this winter.

It is sometimes a real misfortune for a man to have two or three good seasons at his start in bee-keeping. He is building on a false foundation. It takes several years to find out what an average is in bee-keeping. When disaster comes, as it is sure to sooner or later in the shape of a poor season, he is not as well prepared to meet it as if his earlier experiences had been less flattering.

AMOUNT OF HONEY TO THE ACRE.

The amount of honey that an acre of honey-producing plants may yield is a very interesting subject that has been guessed at a number of times; but since it is difficult to get any accurate data on which to base the estimate, the results have not been very satisfactory. A recent attack on the problem from an unusual direction is at least interesting. This is contained in "Bee-products in Arizona," a part of Bulletin 51 issued by the Arizona Experiment Station. Their results "were obtained by selecting typical plants or areas, estimating the number of blossoms, and determining the sugars in samples of average flowers." They calcu-

late by this method that a medium tree of mesquite may produce 2.53 lbs. of honey; a medium bush of catclaw .36 lb., and a large bush of *Acacia constricta*, apparently a near relative of the catclaw, .39 lb. An acre of alfalfa in full bloom is estimated to produce 55.9 lbs. This, it is stated, corresponds roughly to the "farmer's estimate" of a can of honey (60 lbs.) to the ton of hay.

A serious flaw in the table is that it does not state definitely whether the estimate is on the amount of honey actually in the blossoms at the time the calculation was made or whether it is an estimate of the season's yield based thereon. Apparently, though, the former is the case when it becomes evident that the estimate must be much too high, since the amount in the blossoms at any given time is much less than will be secreted during even the short time that alfalfa is allowed to remain in bloom. It appears that we are at liberty to guess again.

The Arizona bulletin contains some other items of interest. The analysis of nectar showed that the proportion of cane sugar ranged from one-twentieth to five-eighths of the invert sugar; while the analysis of a number of samples of honey showed an average of about one-fiftieth as much cane sugar as invert sugar. This confirms what we have been told by other good authority, that nectar does not become honey until it has been transformed by the bee.

Two of the samples of honey contained an abnormal proportion of ash. This is accounted for by the fact that they are desert-flower honeys, the bloom of which, growing close to the dusty ground, became charged with dust, which the bees could not entirely remove from the nectar.

Comparison of Arizona honeys with averages of analyses of Eastern honeys, made by the Department of Agriculture, show that the Arizona honey contains considerably less water and a larger percentage (about seven per cent higher) of invert sugar than the Eastern honey. If this would hold true of the Colorado honey, it would, perhaps, account for the unusually solid granulation of our honey.

It is stated, however, that the alfalfa honey produced in Arizona is darker than that made in more northerly localities. Why this should be is not clear, though it will be remembered that some have claimed that honey produced in very hot weather was darker than that made when it was cooler. Arizona, I believe, is the hottest State in the Union. Experiments were made in liquefying granulated honey, tests being made with a number of samples heated to different temperatures. The conclusion reached was that any temperature over 130 degrees changed the color and flavor, and that any thing over 160 was injurious.

THE NATIONAL NOMINATIONS.

When I nominated O. L. Hershisser for President I neglected to state that he has twice been honored with the position of

Vice-president. Logically, he is not only fitted for the higher office, but, according to precedent, is deserving of it. I am not going to make any more nominations, but will call attention to several men who would fill the very important office of Manager acceptably, in my opinion. No one could reasonably find any fault with the present Manager and the way in which he has conducted the business with an eye to the best interests of the Association; and the only possible reason for electing any other would be that he has already been burdened with the somewhat onerous duties of the office for the past two years. If it came to making a choice elsewhere, my preference would lie between two men — Mr. C. P. Dadant, the present Vice-president, and Mr. Frank Rauchfuss, who has already been nominated. Both of these are sound, clear-headed business men who have made a success of their own business, and could be depended on to look properly after that of the Association. Besides being a successful business man, Mr. Dadant is clear-sighted and broad-minded, and could be relied on to take that comprehensive view of things so necessary for one in that position. Ever since coming to this State I have had my eye on Mr. Rauchfuss as a man who was not as well known in the bee-keeping world as his merits warrant. Though modest to a degree, he is eminently well fitted for a position like that of Manager of the National. His able management of the Colorado Honey-producers' Association shows that he has the qualities needed in the business head of the National.

DIRECTORS FOR THE NATIONAL.

Although there is nothing in the constitution about it, and though the Association would probably be quite as well governed by men selected without any reference to location, custom and general sentiment recognize the fact that members prefer to be represented on the Board by a man from their own State or locality, and there is a growing tendency to elect a man from the same State as the man he succeeds. Would it not be well to recognize this fact, and make it more systematic by dividing the country into as many districts as there are directors, basing the size of the district on the number of members therein? For instance, if there are 2400 members, each 200 members would be entitled to a director to be selected from their district. If a State contained enough members, it would constitute a district. In the case of States having but few members, several adjoining States could be grouped together to form a district.

OUTDOOR FEEDING.

I have done a great deal of outdoor feeding for stimulative purposes, and have always considered that, whenever this form of feeding was at all possible, it was much to be preferred to any other method. Not only is it far less labor than feeding by ordinary methods, but it does far more good. Feed-

ing outside more nearly approaches the conditions of a natural honey-flow than the feed that is given to the bees in an unnatural way and generally at an unnatural time.

To make it profitable, of course one must own all or nearly all the bees in the immediate neighborhood. How far away another lot of bees must be in order that they may not take too much from your feeders depends somewhat on the method of feeding. If you feed only enough to keep the bees busy for a short time each day, bees that are only half a mile away may not find it for some time. But if the feeding lasts for any considerable time, they are liable to find it sooner or later, even if they come from several times that distance. I always considered it better to feed so that the bees were employed most of the day carrying it to their hives. This is secured by thinning down the feed so that the bees do not take it so eagerly. Many are afraid to feed outdoors for fear of inducing robbing. This may be prevented in two ways—first, by putting out enough feed so that all the bees can readily find it and help themselves. The other way is to thin down the feed until the bees no longer get excited over it. A very small amount of feed may thus be made to keep busy and contented the bees that at times make so much trouble by pouncing down on every colony as soon as its hive is opened.

In outdoor feeding I have found just one serious drawback aside from the expense of feeding your neighbors' bees. This came to me very forcibly one morning in May after the bees had been working a week or more in the feeders. The day began with a cold drizzling rain so that I did not put out feed as usual. What was my surprise and disgust, though, to find that the bees came out after it just the same as usual. They hovered around the feeders until they became wet and chilled. Bees were scattered all over the ground, and festooned over every thing near the feeders that would support them, until many thousands of them perished. The losses from that source probably came near balancing the good done by the stimulative feeding. The loss of bees probably would not have been so great if the feeding had been done under an open shed so that the feeders would have been sheltered from the rain. If this had been done, especially if the feed had been kept warm, the bees could probably have made their way through the rain without much loss.

FOUL BROOD.

Adrian Getaz, writing in the *American Bee Journal*, says that the chief difference between foul brood and bee paralysis is that the first is a rapidly developing disease, and the other a slowly developing one. One might as well say that that is the chief difference between smallpox and malarial fever. As some humorist has said, their chief resemblance is that they are so awfully different. While it is true that foul brood is a

rapidly developing disease as regards the individual bee, it can hardly be considered as developing rapidly with regard to the colony. A good colony attacked by foul brood will usually live two seasons, unless the intervening winter is a severe one. This slowness of development of the disease in its early stages, sometimes almost disappearing for a time, sometimes makes a great deal of trouble for the bee-inspector, as the bee-keeper is sometimes inclined to think the inspector has made a mistake in his diagnosis, and so neglects to do any thing for the infected colony.

KEEPING OVER COMB HONEY.

Some have inquired of me how the honey came out that I held over from last season. Early in August I had a good offer for this honey, so I sold it, with the exception of several cases which I still have, and some of which I may keep another year for experiment. This honey was in first-rate condition when sold. A few sections containing the later-gathered honey showed slight granulation, especially around the edges where the later honey was placed; but nearly all of it was absolutely without granulation, and none of it was bad. Out of sixty cases, less than half a case was granulated to any extent. Owing to the scarcity of honey this season it sold at a fancy price, and holding it over paid a very handsome profit. Of course, this could not ordinarily be counted on; but in any case it would not have been subject to any discount on account of its age. Some of this honey formed a part of my exhibit at our county fair, and bee-keepers who were invited to pick it out from what was produced this year confessed their inability to do so.

This is an important subject, and I shall refer to it again. Colorado bee-keepers have lost a great deal of money on account of the premature granulation of their honey, and it is subject to a discount in some markets because of this tendency to granulation. This may be avoided by proper care. Always store your honey in a dry, hot, well-ventilated place. You will notice that I say "hot" instead of "warm." I find that what most people consider a warm place is not warm enough for honey. Keep it as near 100 degrees as possible.

[I wish to indorse every thing Mr. Green has said in favor of both candidates for the important office of General Manager of the National. Both men are splendidly fitted for the position; but there is a strong doubt in my mind whether either would accept the nomination.

Regarding the candying of alfalfa comb honey, Mr. Green has possibly struck on something of more than ordinary value when he recommends that honey kept over be stored in a room not only warm but hot, up to 100 degrees Fahr. The question might arise whether at some season of the year the fuel would not overbalance the extra price of the honey.—ED.]



THE grading-rules will probably have a thorough overhauling at the next National convention in Chicago, Dec. 5, 6, 7.

IN our next issue we hope to have two articles, with suitable illustrations, on how to winter bees outdoors in single-walled hives with little or no expense for outside protecting-cases. The poor seasons generally over the country have made economy a matter of more than ordinary importance.

CORRUGATED pasteboard for shipping-cases has been tried by J. A. Green; and from a private letter from J. E. Crane, Middlebury, Vt., I learn that he has been making some experiments that are very satisfactory. He has promised to write an article a little later, telling why bee-keepers and supply-manufacturers should substitute a yielding material for the unyielding drip-sticks.

IMPORTANCE OF FEEDING EARLY.

IF your bees are not already fed, you had better see to it at once. Of course, one can feed late, and use thick syrup; but the results are not as satisfactory as a thinner syrup fed earlier. The bees can ripen it in nature's way, so it is a fitter feed for the long winter's sleep; but, what is of considerable importance, they can make a winter nest in the combs.

"ADVANCED BEE CULTURE."

I HOLD in my hand the advance proof-pages of this new work in press, by W. Z. Hutchinson, editor of the *Bee-keepers' Review*. If the pages before me are any sample, the work has been very largely revised, bringing in some of the latest suggestions and ideas that have come to the front. Mr. Hutchinson is a careful and conservative writer, and at the same time he is well posted in all the latest developments that have been made in the subject of bee culture. The book is designed primarily for the advanced bee-keeper, and hence its name; but it may be read with profit by the beginner class in connection with other works written especially for the novice. No statement is made as to what the price of the book will be, or whether or not it will be larger than before. Due announcement, however, will be made at the proper time.

"SWARMING OUT" AT THE HOME OF THE HONEY-BEES.

SOME of the friends may wonder why Mrs. Root and myself should go back to Ohio, and,

after such a brief stay, come right back to the cabin again. Well, it was because our youngest, Huber H. Root, was married to Miss Mabel Knisely, of Butler, Ind., on the evening of Sept. 6. They are now off on their "honeymoon." We have invited them to stay in the "old hive," but they have consented to do so only temporarily. They seem to have agreed on a smaller home, perhaps not even "eight-frame," and I don't know but some sort of a "nucleus hive" will be their idea for the present. A big hive (or a big house) is too much care and responsibility for the "gude wife." Thus you see The A. I. Root Co. promises to have timely accessions of young brain and muscle. Huber is just in time to make the connecting link between the children and grandchildren, that are rapidly coming of an age to "notice things."

Huber has been helping Ernest in the editorial work, as well as making some improvements in the bee-supply line. Already two patents have been issued to his name, and other minor improvements have been made to various devices sold by The A. I. Root Co.—A. I. R.

The following appears in the *American Bee Journal*:

Mr. Huber H. Root, youngest son of Mr. A. I. Root, was married, Sept. 6, to Miss Mabel Knisely, of Butler, Ind. Our heartiest congratulations to "Huber," who has evidently done so "Knisely" in a matrimonial way, and also to "Mabel," who is now so well "Rooted." They will be "At Home" in Medina, Ohio, after Oct. 15.

Here is what the *Bee-keepers' Review* had to say:

Huber, the youngest member of Mr. A. I. Root's family, is now a married man. On the 6th of this month he and Miss Mabel Knisely, of Butler, Indiana, joined hands and fortunes, and will make their home at Medina. Huber is a bright, energetic, agreeable young man, and, unconsciously, makes friends for himself and the Root Company wherever he goes. The *Review* wishes him and his young bride a long, happy, and useful life.

DR. SALISBURY AND THE SERVICE HE RENDERED TO E. R. ROOT YEARS AGO.

THE picture of Dr. J. H. Salisbury, as shown elsewhere in this issue, brings vividly to my mind the time when I used to go to see him, a trifle over thirty years ago. I was a lad then twelve years old, all run down, and so deaf from a sort of chronic earache that it was with difficulty I could hear any one talk, even when he yelled. My parents took me to this eminent physician, and almost his first order was, "Don't let any ear doctor tinker with his ears. That boy is young yet, and with proper treatment he will outgrow the difficulty with his ears." I was put on the meat diet, and in the course of two or three years my hearing was perfectly normal, and is to-day, notwithstanding over thirty years have intervened. I have some friends who have had various ear doctors tinker with their ears; and the more they have been tinkered, the greater the difficulty in hearing.

I know this is outside of bee-keeping; but my experience may be useful to some other sons of bee-keepers who have been troubled

more or less from earache and chronic colds. I thoroughly believe that Dr. Salisbury saved me a world of discomfort, for it is an awful thing to see people talking in an animated conversation, see the lighting-up of the countenances, and occasional laughter, and yet know nothing of what has been going on. The world laughs and talks. You see it, but hear it not. I have been there; and now, thanks to my old friend who has left this world, but who, fortunately, left his teachings, I am able to enjoy the use of my ears as well as other people.

Dr. Salisbury's treatment was nothing more nor less than to drink copious amounts of hot water before each meal and just after getting up, eating a little cereal and lots of beefsteak. Every mother knows that a growing boy needs strong nourishing food, and that is precisely what I got. I had plenty to eat before, of course, but it was not of the kind to develop strength and muscle to supply the constant drain due to colds and chronic catarrh.

Some of our older readers know how in later years nervous prostration came on; and the same treatment, administered by Dr. J. M. Lewis, Rose Building, Cleveland, Ohio, restored me to health.

SPECIES AND VARIETY.

In Mr. Doolittle's department in this issue he makes some statements in regard to "varieties," "pure stock," and "thoroughbreds," that, unless understood, may lead to confusion of terms. Species includes a large class of varieties of bees. *Apis mellifica*, or *Apis mellifera*, as now seems to be preferred, is a species that takes in varieties like Italians, Cyprians, blacks, Carniolans, Caucasians—in fact, all the races of bees that so far have very much commercial value. *Apis dorsata* belongs to an entirely different species. Mr. Doolittle speaks of Italians as being a "variety," or a "thoroughbred," and the inference is that black bees are not a variety. In one place he says Italians "are not a fixed type," and yet in another place he calls them "thoroughbreds." Under the word *thoroughbred* (as you will see in the Standard Dictionary) we find "a breed kept pure for many generations." According to this, Italians can hardly be "thoroughbreds" and "not a fixed type." Either our correspondent is unfortunate in the use of his terms or I do not understand him. I do not bring this up to criticise, but to make sure we do not get mixed up in our terms.

Regarding the five-banders, I agree with Mr. Doolittle that there is a strong demand for them; but the bees of this type that we have had any experience with were very cross. Our north yard had many of these bees; and our boys often remarked that this was the "hardest and meanest yard" to handle that we have. The imported Italians that we have had any experience with have been decidedly of a fixed type, of a leather-colored order, showing three yellow

bands; always gentle, fairly good workers, and hardy. We found by experience that it is easy to get extra-yellow bees out of Cyprians or Syrians, but very difficult to get any sport in color out of the typical imported from Italy.

WINTERING BEES OUTDOORS UNDER A DEEP SHALLOW CAP OR COVER.

MR. VERNON BURT wintered very successfully last winter his 300 colonies outdoors. The arrangement seemed so simple and so cheap that, if I did not positively know Mr. Burt's veracity, I would not give the matter even a single thought. The plan is, in brief, this:

Early in the fall he sees that his colonies are well supplied with sealed stores. He uses the Danzenbaker hive; and if the cluster can be crowded into one section, one section is given. If they require two, of course they are allowed to have them. The same super-cover that is used to cover the super for comb honey is put on top of the brood-nest. This the bees seal down hermetically. On top of this cover are placed several thicknesses of newspaper laid out flat. On top of the paper is placed a shallow chaff-tray containing chaff or any other equally good packing material, to the depth of three or four inches. The paper sticking out in all directions is neatly folded down around the sides of the hive. Over the chaff tray, and fitting snugly against the paper folded against the inner hive, is crowded a deep telescoping cap made of $\frac{3}{4}$ lumber, with a tin roof. The actual packing material on top is some four or five inches thick. The sides of the hive are protected by the folds of paper and the outer case. This outer case comes down to within about one inch or so of the bottom-board. As the heat naturally rises inside of the hive, there is no need of making a double-wall bottom-board, nor of protecting the bottom edges of the hive.

Undoubtedly the several thickness of paper are a good deal more than equivalent to the same thickness of chaff or any other loose packing material. The air in the folds of the paper is shut in almost air-tight, and therefore it does not find means to escape, causing a too rapid radiation of heat.

We have used here for years outside winter cases, but there is a space of an inch or more between the outer and inner walls, this space being packed with chaff or planer-shavings. Of course, it is necessary, with an arrangement of this kind, to have a cover that will telescope over the winter case, otherwise it would be impossible to get the packing material around the sides of the hive and on top of the inner cover. But it always made a big litter every spring when we proceeded to "unpack." If the paper packing used by Mr. Burt is equally good it will save some expense, save litter in the spring in unpacking, and, what is more, the telescope case will be worth its entire cost one season. Mr. Burt estimates, to protect the comb-honey supers cool nights in the

summer time, when the bees would otherwise desert the sections. Mr. Burt estimates, therefore, that the winter cases are equally valuable both in summer and winter.

"THE GOOD SEASONS WILL COME AGAIN."

THE following editorial in the *Bee-keepers' Review* contains so much good sense that I am glad to place it before our readers with a hearty amen:

I have a most sensible letter from a subscriber in one of the Southern States. He writes rather discouragingly in regard to his location, saying that there have been repeated failures, year after year, and in two years he has fed twenty barrels of sugar to keep the bees alive.

In former years he had harvested crops that were phenomenal, and was able to rear queens continually from March to October, with no feeding at all. Now all this is changed. He says the question with him is, shall he go somewhere else? Upon investigation he says it has been found that nearly all localities have periods of failure, the same he is now experiencing. He has about concluded that nothing may be gained by changing. If the same kind of honey-producing plants are present in large numbers, as those that furnished the big crops of the past, I think I should stay by them. Along in the nineties we had very poor honey crops here in Michigan—so poor that I came as near being discouraged as I ever did. I began to feel that, as the country was being cleared up, the honey-plants were disappearing, and that the good crops were things of the past and not of the future. In this I was mistaken. The last three years have furnished excellent harvests. As reported recently in the *Review*, one bee-keeper near here secured, last year, nearly 100 lbs. of comb honey, per colony from 60 colonies, spring count. Taking the country as a whole, it appears as though the crop for this year will be a light one, but Michigan is furnishing a good crop. And so it goes. That is, the good seasons come and go; and, unless the plants have been destroyed that furnish the honey, unless the conditions have been radically changed in some manner, I think it doubtful if it is wise to change localities because of a few years of failure.

ANOTHER COMB-HONEY CANARD RETRACTED; THE DUTY OF BEE-KEEPERS.

SOME time ago there appeared in the *Denver Post*, one of the leading dailies of the West, the old statement about manufactured comb honey. The local bee-keepers, I imagine, immediately wrote their protests. At any rate, Mr. A. S. Parson, President of the Arkansas Valley Honey-producers' Association, took the matter up vigorously by letter. Failing to get a satisfactory response he wrote again, and received a very nice letter from the managing editor, stating he did not blame Mr. P. "for having feelings, and a whole lot of them, and expressing 'em pretty strongly." He further added that, if Mr. Parson would write an article of about 500 words, explaining the general facts about honey, he would place it on the query page. The result was a full correction, with a strong black heading, "Comb Honey Can Not be Manufactured," and a double-column denial below.

I suspect the thing that carried weight was the fact that Mr. Parson was the *president of a honey-producers' association*. His protest carried with it the implied protests of all the membership back of him. In nine cases out of ten I believe local bee-keepers can secure retractions if they will either go in person or write, and politely request the privilege of replying.

The trouble is, the average bee-keeper will send such items to the editor of a bee paper, which is all right so far as it goes, and stop there. He should not only do this, but he should at the same time send in a courteous denial to the editor, and then follow it up with a personal interview if possible. This is a duty that the secretaries and presidents of the various bee associations or honey-producers' associations, if you choose, should take up promptly, writing the protest on the official stationery of the organization.

The A. I. Root Co. always writes to all these papers; but we are often ignored or turned down, possibly because the managing editor thinks we have an "ax to grind," or that we are one of the alleged manufacturers of comb honey, and are trying to cover up our own misdeeds; but when he is addressed by an official of a bee-keepers' association he sees the matter in an entirely different light, and is more inclined to give the protest or denial a reasonable consideration.

DID A COG SLIP? MORE THAN ONE LARVA IN A QUEEN-CELL.

MR. PRITCHARD called me out to the yard one day this week to see something he had found. He pulled out a frame containing what appeared to be laying-worker drone brood. There was nothing particularly remarkable about that. He then showed me a queen-cell that actually contained nine big fat grubs, presumably all of them drone larvae. We opened up other queen-cells, and found from three to five larvae in each.

Very possibly this thing has been reported in these columns; but if so I do not remember it. Evidently nature has made a mistake, or a "cog has slipped" somewhere. We have had numerous reports of bees building cells with one drone larva in it; but here is a case where there is a decided plurality of them.

HANDLING HOFFMAN FRAMES IN THE FALL.

AT this time of year propolis is unusually abundant, sticky, and, in cool weather, hard. In separating the frames, enter the end of the knife or hive-tool between the *points of contact* of the frames—that is, between the square edge of one frame and the V edge of the opposing frame. Push the blade down, then give it a slight twist. If the hive-tool be entered between the top-bars, there is a possibility of splitting off either the V or square edge of one of the frames. Before the middle of September, and after March or April, when the frames are handled the most, Hoffman frames may be separated in any old way without danger of breakage.

A CORRECTION.

AFTER the first footnote on page 1032 was printed, A. I. Root sent in some corrections. He meant to say, in the middle of the note, that he "*usually* has an attack" of his old trouble; also that, "*as a rule*," he eats fruit and other things that other people do, while in Northern Michigan.



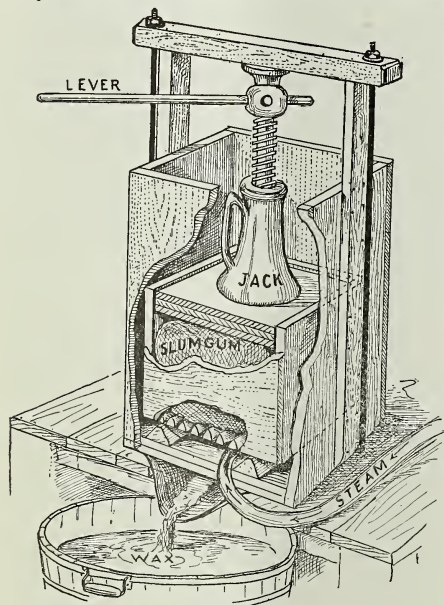
RENDERING OF OLD COMBS BY STEAM.

How to Get the Wax from a Lot of Foul-broody Combs; a Home-made Steam Wax-press.

BY LESLIE BURR.

For the rendering of wax, if you have but a few pounds, almost any way will do; but if you have a few thousand pounds it is a different thing. To start with I will tell how the bulk of the combs from about 800 foul-broody colonies were handled, and also the bees.

The yard was gone through, and every comb that did not contain brood was taken away, the honey extracted, and the combs cut out of the frames (no care was taken in working the colonies nor in extracting, as they all had foul brood, and time counted



A SERVICEABLE HOME-MADE WAX-PRESS.

more than care). Hives were then made ready, the frames fastened, using starters on only the center frames, as full sheets of foundation would have to be used later. It was useless to use foundation as starters when full sheets would be needed later.

We then started in and shook bees all day. In the evening the colonies were loaded on carts, and the next morning taken to

a new location several miles distant. The brood from the colonies that were shaken was stacked up over colonies that were either queenless or had the queens caged. When this brood hatched, those colonies were shaken and the bees moved to the new location.

This way of handling foul brood is not new or original; but the way of cooking the combs and pressing the slumgum was.

The combs were cooked with live steam in an ordinary barrel. The steam was conveyed to the barrel through a hose. The pressure averaged from 60 to 80 pounds, and a barrelful of combs could be cooked in less than 15 minutes.

The wax was then dipped from the barrel, and strained through a wire screen, which was nailed on to the bottom of a super, into large tubs, in which it was possible to make cakes weighing from 100 to 150 lbs.

The slumgum was dumped into a sack, the sack put into a barrel, and the steam-hose thrust into the sack, getting it as hot as possible before putting into the press. The cut will give you an idea as to how the wax was separated from the slumgum. The power was a jug-jack, and the steam-hose was for a persuader. The two combined got every particle of wax. The box or basket which held the slumgum had for the sides and bottom a heavy gravel-screen. The plunger on which the jack rested was made of several pieces of boards with the grain crossed. The machine was set on a platform about 2½ feet high. An apron was fixed to catch the wax and run it into a tub.

As to the value of the press, it was found that, on an average, 40 per cent of the wax from those old combs came from the press. When you do not have steam, the next best way is to make a fire-place out of doors. Have a large can for cooking; and, after straining, run the slumgum through a German wax-press.

In cooking old combs, always use plenty of water, and it is also a good thing to have a quart or so of water handy to douse into the boiling wax when it takes a notion to boil over.

A CHEAP PRESS FOR A SMALL AMOUNT OF WAX.

For those who have but a small amount of wax each year the simplest way to handle it is to make a strainer and press combined. To do this, take a comb-honey super and fasten a wire screen over the bottom; and to strengthen it, use several pieces of heavy wire. Telegraph wire is about the right size. Now take a piece of plank; cut it to fit inside of the super. With an inch auger bore a hole in the center of it, and into this hole fasten a pole two or three feet long.

You are now ready for business. Put your strainer over a tub. When you have accumulated two or three quarts of slumgum in the strainer make use of the plunger. To get out the last of the wax you will have to stand on the plunger with both feet. Take hold of the pole, and rack it back and forth.

In this way you can get just about all of the wax, although sometimes it is best to dump the slumgum back and cook it and press it a second time.

Another thing is to have a hole near the bottom of your tub, with a plug in it. This is to let off the water from the bottom. By so doing the size of your cakes of wax is limited only by the size of the tub.

TO GET CAKES OF WAX WITHOUT CRACKS.

The way to get large cakes of wax, and have them free from cracks, is to have the wax all cool at the same time. The only practical way to do this is to dip the wax from one tub into another. If a little care is used in doing this, perfect cakes of wax can be obtained up to almost any size.

Casanova, Cuba.

[Mr. Burr has, I believe, suggested the best practical home-made wax-press that has yet been submitted to our readers. The use of a jack-screw in connection with a suitable frame, a box to hold the slumgum, makes a very simple and cheap outfit. Our artist, however, has failed to show a cross-arm, against which the screw engages, sufficiently heavy. It should not be smaller than a 4x4 oak cross-piece; and the inner box to hold the cheese or slumgum should be well bound around the sides with strap iron. The jack-screw is a powerful machine; and when the enormous pressure it is capable of exerting on the plunger-boards is applied, the cheese is quite liable to spread out sideways, bursting the box unless it is made very secure. Otherwise the illustration is fairly correct.

Perhaps the average bee-keeper may feel that this outfit will not be available for his use, as he would have no steam-boiler at his command. Let me suggest to all such that they load the wax-press and a load of combs into a wagon, and drive to the nearest steam-boiler. An arrangement can doubtless be made with the owner of the boiler to furnish steam at a nominal price. Common garden hose will answer for conveying steam from the boiler to the press.

The advantages of steam over hot water, for this purpose, are so very decided that one should by all means use it if he can. But failing in that he can heat the slumgum in a kettle of hot water, dip it into a burlap sack, and quickly put it under pressure. After it has been squeezed until no wax runs out, he can put it back into the water and cook it again, and give another squeeze with the press.

I wish to say here that the jack-screw has a great advantage over the ordinary carpenter's vise-screw, in that, the moment pressure is released by turning the screw down, the whole screw can be lifted out of the way for the easy removal of the pressure-board and cheese, for time must not be wasted in getting the hot slumgum under pressure.

Mr. Burr discovers that the press will secure 40 per cent of the wax over and above that rendered out in the old way. We

found the percentage was even higher. Any bee-keeper who thinks he can get along without a wax-press is, in my opinion, burning up or throwing away good dollars.—Ed.]

HIVE-TOOLS.

Many Tools Not Needed; Don't Waste Your Time Scraping; Leave That to a Cheaper Hand.

BY F. C. HOCHSTEIN.

Oh, my! here comes my friend Burr scraping into a Cuban apiary with an old putty-knife. Well, I declare! I thought better of him. I thought he was an up-to-date bee-keeper; but the apiarist in Cuba who goes scraping around with an old putty-knife is certainly a back number who does not value either his own time nor that of his employer very highly. Come, friend Burr, stop robbing yourself or your employer with that putty-knife. Hire a little nigger boy at 20 cents a day; turn over your old putty-knife to him; give him an old bee-veil full of holes. The holes will let the bees get in on him. Keep him moving; let him do your scraping; don't work for 20 cents a day yourself. Let us do away with that putty-knife. The bee-keeper has no need of it. First, paint all the edges of your bee-hives and the bottoms of your covers with carbolineum. This does away with all the sticking of these parts; then use a Hochstein cover, a properly made one, 26 inches long, not like those you have been using here in Cuba, 24 inches; that extra two inches makes as much difference on these covers as two inches would on a man's nose.

In the summer season I shove these covers front as far as I can. This takes all the rain drip over beyond the bottom-board entrance.

In the winter, or during the honey-flow, I shove the cover over the back of the hive as far as possible. This gives quite a projection, and gives you a leverage that the bees can not build brace-comb enough to the cover but that you can easily pull it off with one hand—no need of a putty-knife.

The only tool an apiarist needs is a Coggs-shall brush with a Hochstein point to it (see the point). That point is a 40-penny wire nail driven into the handle of the brush. Leave about 1½ inches sticking out, then file off the head and file it to a point like a scratch-awl. It is the only tool—keep it in your right hand always.

Now let me take you out into the apiary and show you how I work it in a good honey season. First I take the machete away from my 20-cent nigger and hang a small tin pail in its place. This is for the wax scraps. My helper takes the wheelbarrow and the smoker—nothing less than a four-inch smoker will do. I need nothing more than my Coggs-shall brush with the Hochstein point in my right hand. Now we are ready.

With my left hand I take hold of the corner of the cover; pull it off and give it a

hard sudden jar on its opposite corner on the ground in front of the hive; this dislodges every bee; then I throw the cover upside down behind me to that 20-cent nigger, and if there is any scraping to be done he does it; and when I get through with the hive he slaps it on.

While I was taking off the cover my helper has blown a stream of smoke across the top of the frames, so the instant my hands let loose the cover the frames are ready for me. With that Coggs-shall-Hochstein brush I pry out one frame; brush the bees back into the hive through the opening made by the frame, and put the frame of honey into an empty case on the wheelbarrow. This is all the brushing of bees there is to be done—one frame in each hive. The next frame is pried sideways until you can get your thumbs behind it; then lift it out, tilt it backward until the top-bar points to the ground; then from about a foot above the hive strike with the frame a sharp hard lick on the back edge of the hive, and every bee will go down on to the top-bars of the lower story. The rest of the frames are used the same. You want to be particular to strike the frame on the end-bar just as close as possible to the projection of the top-bar, or, in other words, make the blow come where the Root Company puts the staple in the Hoffman frame. It may sound as though this would be hard to do; but with little practice one can almost do it without looking. Of course, your frames and covers want to be well made and nailed. As to scraping out brace-comb, etc., from the hive-body in a honey-flow, that is utter foolishness—a waste of time. An empty frame will always go back into a place vacated by a full frame.

I don't ask you to adopt any of my methods, but I am always willing to give any one the benefit of what little I know, especially young fellows and new comers. Do try a 20-cent nigger next season to do your scraping. Besides being a great saving to the bee-keeper, it gives one a millionaire feeling to have a little nigger following him up to do his scraping.

Now in regard to that Hochstein uncapping-device, I am not the father of it. That is a get-up of my son; but as I use it in my three apiaries I suppose that I belong to that class of bee-keepers who know very little about practical bee-keeping.

From what you say about this uncapping-machine I am sure that you never used one; or, if you did, you probably got some wood-butchers to make it—one of those men, I mean, who are born to carry the hod; and you know a good thing badly made is worse than none at all.

You say you have never seen any place where it was necessary for you to put knives into water to uncap with. Of course you have traveled a great deal, but there may be a few small places yet left where you have not been.

If you will go to Putnam County, Fla., during a good orange-bloom you will not

only find it necessary to put your knives into water, but will have to have it hot at that. I may be mistaken, even in this; and you may even there be able to do without water, for I have seen men extract, without even uncapping.

Punta Brava, Cuba.

WINTERING BEES IN THE CELLAR.

Do Not Use Smoke, nor Jar the Hives so as to Break the Cluster; Keep Them Quiet.

BY W. S. GROW.

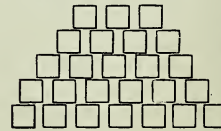
After reading in the March 15th issue of GLEANINGS so many different opinions by different bee-keepers in regard to cellar wintering, mid-winter flights, etc., I think giving my experience in cellar wintering may not be out of line. My bee-cellar consists of a small portion of the house cellar partitioned off in one corner with two thicknesses of inch lumber. It is made mouse and rat proof, and very nearly air-tight. The size of it is 12×14 feet by 6 six feet high. It contains at present 150 colonies of bees which are wintering very finely. I am an advocate of the tight bee-cellars with no ventilation, with all rays of light shut out, making it absolutely dark.

I will say right here that my success in wintering is largely due, if not wholly, to very careful handling in the act of placing the bees in the cellar. I strive to get a day some time during November, when the mercury stands from 28 to 35°, with snow on the ground, as I always use snow to stop the entrances if possible.

About the first of November, I take a day when the hives are not frozen down to the bottom-board. I go to each hive, and, raising the front end carefully, I place a large-sized tooth-pick under each front corner, which keeps the hives from being frozen down when I come to carry them in. In carrying them into the cellar I place two colonies on my bee-johnny, or carrier, bottom-boards and all, so as not to disturb the bees. Then my hired man and myself carry them to the cellar very carefully, keeping step so as not to jar them. When we reach the cellar they are picked from the bottom-board and tiered up thus, five high.

The same cover is used in both summer and winter. By the accompanying plan we do not even break the cluster or disturb them. I never use

any smoke in putting bees in. In fact, I never have any occasion for it. On the other hand, if I had put my bees in as the most bee-keepers do, with a rush, using a block 2×4 or something else to stop bees in with, and bang around the hives and wake them up out of their pleasant dreams only to glut themselves with honey, etc., I should expect, about the last of February, to see polka-dot hives (which gives the practical



apiarist a cold chill), and bushels of dead bees that died with dysentery, making the only salvation for the apiarist a mid-winter flight for his bees, which comes a good way from being a cure, but the best thing, probably, that could be done in such a case.

Bee-keepers in general are not aware of the small amount of air that bees need when in the cellar, if they were properly put in and the mercury doesn't get above 48°. I have known of this being done in cellars where the temperature ran high for a few days before the bees were set out in the spring: suspend a cake of ice in the center of the bee-cellar, and set a wash-tub under to catch the drip. Of course, if the cellar were very large it would not amount to much. You have to supply ice and empty tub as the ice melts. I was in my bee-cellar yesterday, March 21, and could not see a spot on a hive, and not dead bees enough to half cover the floor one bee deep.

Italy, N. Y., March 22.

[This article came so late last spring that we deemed it best to hold it until the wintering subject would be more seasonable, and hence it is given now. The plan of piling hives one on top of the other, or, rather, one hive over the space between the two bottom hives, is the one used by H. R. Boardman, and which is in general use by many bee-keepers who winter without bottom-boards. It gives a large amount of ventilation, and a chance for the bees to drop out of the way, away from the cluster or combs.

But I believe our correspondent is wrong when he advocates "tight bee-cellars with no ventilation." While *he* may be able to get along with such a cellar, the great majority would meet with severe losses. If the temperature can be controlled so it does not go above 45 to 48, as Mr. Grow states, nor below 40, one can get along with little or no ventilation. I am aware that opinion is divided on this point; but in nearly every case where no ventilation is advocated, I discover that the temperature is under control.—Ed.]

PERTINENT NOTES ON IMPORTANT SUBJECTS.

Why Hives Should Not be Ventilated at the Top.

BY E. S. MILLER.

Dr. Miller asks, p. 756, "What makes you think bees don't like to see daylight through the top of the hive?" Well, my belief is based chiefly upon the behavior of the bees themselves. I have observed, in the first place, that both natural and "shook" swarms frequently, if not generally, abscond if placed in hives with large openings at the top. In the second place, if the openings are not so large as to prevent it the bees will seal every thing up tight with propolis. An opening above is apt to admit rain and sunshine, both detrimental to the welfare of

the colony. It is, however, not so much a question of daylight as it is of maintaining a certain nearly constant temperature necessary for comb-building and for the rearing of brood. This temperature within the brood-nest, Mr. Doolittle tells us, p. 427, is between 92 and 93°. The temperature outside, during the latter part of the night, is, even in July, quite cold—colder than most people are aware of, and the warm air within the hive, being lighter, rises and passes off more readily than in a hive open only at the bottom. If open at both top and bottom, it is still more difficult to maintain a constant temperature, as there will be a draft through the hive, increasing with the lowering of the temperature outside, and decreasing in the daytime as the temperature approaches that within.

HOW TO PREVENT BEES FROM ABSCONDING.

In answer to this, I will enumerate the following conditions which appear to me to be among the most important:

1. Shade.
2. A hive body and cover with sufficient thickness to prevent a too rapid escape of heat.
3. No large openings above.
4. A reasonably clean hive; no fresh paint or odors distasteful to the bees.
5. A good-sized entrance—say $\frac{7}{8}$ inch by the width of the hive.
6. I find that bees are less apt to leave if hived on foundation starters than if given either full sheets or drawn combs. If the above conditions are observed, not one per cent of "shook" swarms will try to escape, provided the queen is in the hive. If one is still afraid of their leaving, cut a piece of queen-excluding zinc one inch wide, and tack it over the entrance, removing it in three days. I believe that nine-tenths of the failures with "shook" swarms are due to the fact that the queen is either killed, lost in the grass, or removed with the brood. Don't shake bees outside of the hive. Don't set frames down behind or at the side of the hive when loaded with bees unless you know where the queen is. Don't remove brood without shaking or brushing off *all* the bees.

E. W. ALEXANDER'S PLAN OF CONTROLLING SWARMING.

This summer I have been testing Mr. Alexander's plan of increase; and were I to judge by this season's results alone I would predict that this is the process that is destined to come into general use among practical bee-keepers, replacing natural and "shook" swarming. His article in the April 15th number will be worth to me the subscription price of GLEANINGS for a good many years to come. I have tried the plan with about thirty colonies alongside about an equal number of shaken swarms and perhaps twenty natural swarms.

Those in which Mr. A.'s plan was used are far ahead of the others, both in the amount of honey stored, to the present time (July 20) and in the success attending manipulation. The shaken swarms come next, and

the natural swarms are poorest of all. I never saw colonies so strong, nor saw them work more energetically through the clover season. Did they swarm later? Well, two or three did, but so also did half a dozen of the natural swarms that came out in May and the early part of June. Even some that were hived on starters are swarming again now.

There are a few things, however, not mentioned by Mr. A., that should be kept in mind. One of these is that the brood, when put up, should be carefully examined and all queen-cells destroyed; otherwise the young queens, hatching before the ten days are up, are liable to squeeze through the zinc and lead off a colony.

Another thing to remember is that, when the brood is put up, queen-cells will usually be started at once in the upper hive, and will be nearly ready to hatch when taken off in ten days. All but one of these must be removed or they will swarm. Better still, destroy all of them and give them a laying queen.

One feature of this plan worth considering is that, if you wish no increase but an exceedingly strong colony, you can destroy the cells in the upper hive, and leave it on until ready to extract.

When the brood is put up, the super should be placed on the top, not between the two hives, or the cells will be filled with pollen.

GOOD FOR QUEEN-REARING.

Mr. A.'s plan offers an excellent opportunity for raising queens. When the brood is put up, take a frame with a cell-bar and wooden cups, and graft larvæ from your best breeding queen. Place this frame in the upper hive. In ten days, when you take off the top hive these cells will be all right to put in the Titoff cages to hatch. I find it convenient to keep a nursery frame of these cages in some hive where one can dispose of surplus cells, and where queens can be found when needed.

HOW TO LOOK FOR QUEEN-CELLS.

Before manipulating bees in swarming time it is advisable to look through the apiary to ascertain which colonies are preparing to swarm. If modern hives are used, no special contrivance is necessary in examining for queen-cells. Just puff a little smoke in at the entrance, and with the hive-tool (a good $\frac{3}{4}$ -inch chisel is best) pry up the hive in front. Then pick up the hive, super and all; set it forward on the bottom-board, and tip back until it stands up on end. If movable frames are used they may now be turned like the leaves of a book, and examined all the way up. With the Hoffman frames it is not quite so easy; but it can be done if the division-board is left out. The rim on the bottom-board prevents mashing bees; the hive bridging over, as it stands on end, prevents the bees from getting out at the back and making trouble; and the super, having a firm support, has no tendency to fall off. The only difficulty comes when the

hives get too high and too heavy to handle. An assistant is then needed. Shove the hive forward one inch to avoid killing bees, and let one man tip back the hive from behind while the other turns the combs. In the swarming season it is necessary to examine as often as once in five days, or some swarms will be sure to escape.

Valparaiso, Ind.

[This method of leafing over the combs from the bottom as we would the leaves of a book I do not remember to have seen described before. Here is a good argument in favor of the unspaced frame. Nearly all the bee-keepers I visit use fast bottoms so that the hives may be always ready to move, either to shift about the apiary or to move to outyards and into the cellars, so that this plan would be impracticable.—ED.]

AN EXPERIENCE IN HIVING SOME BEES.

The Knack of Knowing How.

BY MRS. BEE.

Well, I suppose I'd better "bob up" serenely and tell our little experiences and the fun we all had helping our neighbors catch their swarms of bees.

About 11:30 one morning in the latter part of May, while my "wayward pardner" (true sometimes) and I were proudly discussing our brand-new "yellow kids" (the bees from the Italian queen we had such a time introducing, p. 767) one of our neighbor's little nieces came rushing breathlessly up to the office door and exclaimed:

"O Mr. Bee! come quick! Grandma's bees have come out of the coop, and part of them have climbed way up a tree! Auntie wants you to help her get them down."

I was nearly blue in the face laughing over the coop idea; but we flew out of our office and down to auntie's, merely stopping *en route* long enough for veil and gloves.

We couldn't miss sport of that kind. The bees were nearly in the top of a tall maple; but it would never do to hesitate, so the "gude mon" nobly shinned up the tree, and with the aid of a bucksaw (such a handy tool to use in a tree!) and a jack-knife managed to butcher through the limb. The two aunties had a sheet on the ground, but the limb was high up and too small to risk much weight on, so it made a wide sweep and spilled some of the bees in the grass, much to one auntie's dismay, but they soon got with the rest.

But this fair maid, in her anxiety to get every bee where it belonged, got their feelings injured, and our absorption in our task was rudely interrupted by a "war-whoop" from her, and we looked to see her dancing frantically around one corner of the house, clutching at her hair and shaking one foot wildly around.

None of us went to her rescue, however. We knew she would deal gently with them, as she was so afraid some would get lost in the grass. Mr. Bee got them hived beauti-

fully, and they started to work at once, and now have a ten-frame hive two-thirds full of comb, honey, and brood.

The amusing part of these bees is, they were the girl's mother's, and that dear old lady carefully watched them through April and nearly all of May, and finally concluded they were not going to swarm, and went on a little visit; and the very day she left they swarmed!

They had but the one colony in an old box hive, and the girls told me laughingly they were very choice expensive bees. The mother has six or seven grown-up children, and the girls said mother got each of them to give her a dollar to get the bees with.

The colony cost but one dollar, yet mother got at least six dollars to buy them; and yet people prate of "foxy grandpa."

The very day after this, Sunday at that, another neighbor had a swarm. He is a young man with three old colonies, all in box hives, and he came after Mr. Bee to help him. He said, plaintively, he *had* put them in the hive, but they wouldn't stay in. We hurried over there, Mr. Bee getting his veil, and the young man's mother whacked off a piece of the netting she covered her dining-table with, and draped him gracefully with it. These bees had gone to the other extreme, and were lovingly clustered in a bunch on a chicken-fence. The never failing sheet was called into action, and my "pardner" and his Coggsball brush soon had them safely hived. This colony has since done splendidly, nearly filling their ten-frame hive. He has put his swarms in the dovetailed movable-frame hives.

The two swarms we bought of a neighbor have excelled all others around, but we gave them, for the most part, full frames of foundation. My own individual colony is the best for old black bees, having a ten-frame hive full of bees, comb, and honey, and two sheets of extracting-frames in the super pulled out. I have sent for a golden Italian queen for this colony, and am daily expecting her. Our three other colonies have nice queens recently introduced—one a golden Italian, whose bees are old enough so they work in the field, and the other—a red-clover queen at present still in her cage in the hive, and a tested three-bander, out July 11, and laying to-day, July 13.

There has been but a very poor honey-flow here—a little fruit-bloom early that cold rains, mostly ruined, and about a week of white clover. But the golden Italian's bees are such hustlers that they go out in the rain to hunt honey; and when introduced to her present family there were but about four frames of bees. Her first bees hatched June 6; and now, July 12, she has nine fully covered frames, and eight of these are full of eggs, brood, and hatching bees. She has more honey in her hive than the others—sealed honey—and lots more eggs. Her bees are pretty, but not so yellow as those we saw in East St. Louis, so I tried for yellower ones for my colony. Of course, we want honey; but, aside from that, we love

the bees; and if Spanish needle fails to make much honey my colony shall have all the sugar syrup it needs to winter on.

Another of our friends has a colony he has been expecting to swarm since April, and on our way home one evening I said to him, "Bees swarmed yet?"

"Naw!" he said, so disgusted. "I told my wife if they didn't swarm soon I was going to kick the blamed old gum over."

It doesn't seem hard to hive swarming bees. I know I could do it. All Mr. Bee has hived have gone in without trouble, and stayed there, and no one was stung.

But it may be like bread-making. I was not taught to cook before I was married; and as I watched my good old mother-in-law mixing bread I said to myself, "Hump! any dunc could do that." But some of the bricks Mr. Bee ate under the name of bread a year or so later, when we went to house-keeping, convinced me there was more to it than "a simple twist of the wrist and the way you hold your mouth." And so it may be with bees and swarms.

I wish to tell, another time, of some transferring from box to movable-frame hives, and also some dividing of colonies, and the consequences.

Ladue, Mo.

A TEST OF THE ALEXANDER PLAN OF INCREASE.

Also a Test of the Nucleus Plan.

BY F. L. DAY.

Last spring, when I read in an April number of GLEANINGS, page 425, the plan of Mr. Alexander for securing both increase and honey at the same time I was much interested. Here was what I had been looking for, but did not expect to find inside the lines of the bee industry—a double crop of honey and 100 per cent increase of colonies. If not, indeed, a short and easy way to fortune, it was at least something approaching it. I selected four colonies of medium strength, having prolific queens, to test the scheme. April 22 the queen and one frame of brood and bees was taken from each of colonies Nos. 7, 9, 12, 13, and then placed in an empty hive under the brood-nest, with a queen-excluder between the two stories. To this one frame of brood and bees had been added nine good combs, some of them having a little honey. On June 1st, in the forenoon, I took the upper stories from the four hives and carried each to a new stand, intending to give them ripe queen-cells in the afternoon. Coming out from dinner about one o'clock I was just in time to see the first swarm of the season. It was from the lower story of No. 12. I was just in time to catch the clipped queen. I examined what had been the upper story of No. 12. It had a lot of queen-cells, some of them almost ready to hatch. Two of the other upper stories also had queen-cells. Here was 75 per cent of swarming, actual or anti-

pated, at nine days from preparation of colonies—not very encouraging.

June 7, what had been the upper story of No. 12 sent out a swarm; also No. 7. Here were three swarms before any of the colonies which had not been divided at all had given a single swarm. From this inauspicious beginning, both upper and lower stories, the whole eight of them continued to swarm until all but one lost or killed its queen. They did good work, though, gathering honey. To count the original colonies, giving each one credit for what honey its new colony made, the result was as follows: No. 7, 125 lbs.; No. 9, 75 lbs.; No. 12, 110 lbs.; No. 13, 145 lbs., or 455 lbs. in all.

I now wish to compare briefly these results with those obtained from three colonies which I devoted to increase by the nucleus plan. Three colonies were increased to 15, and 425 lbs. of honey obtained. Here was 141½ lbs. per original colony, while the Alexander plan gave only 116½ lbs. per colony. The nucleus plan gave 300 per cent more increase, and about 22 per cent more honey, than the Alexander plan. Both produced extracted honey; but the latter plan has merit, and I shall try it again.

Becker Co., Minn.

[But we have had some very favorable reports from others. See what E. S. Miller says in this issue. Perhaps you did not carry it out correctly. Will Mr. Alexander please tell us where the trouble lay?—ED.]

MOVING BEES TO PREVENT SWARMING.

A Modification of the Sibbald and Danzenbaker Plan; a Suggestion that may Have much Merit.

BY O. R. BOSTOCK.

In the foregoing article I explained how I change the positions of hives when moving them to a new location. Since writing that article GLEANINGS for April 1 has come to hand, and it contains an editorial explaining the Sibbald non-swarming plan.

After reading and considering the matter it seems to me that it would be better to carry out this work with groups of hives instead of single ones. Suppose, instead of one hive, we have three standing close together. When swarming is expected, we come along some time during the day when the field bees are absent, and carry all the hives away to a new location. In place of the group of three hives we now set down one hive containing one frame of brood, the rest empty combs or starters. This new hive will now receive all the field bees from the three old ones, and should make a much better showing than if it received the bees from only one. All agree that, the more bees we can get together, the better. There will be no stinging, for all is confusion for a time at finding their homes gone and only an empty hive there instead. They will, perforce, all chum up together when night

comes on, and by morning will have settled down contented in the new home.

Last spring I desired to obtain some of the newseason's honey for exhibition at a fair. In this case I moved the hives up into groups of three, and then carried two away. The one colony left became in each case very strong.

The season was a total failure for honey. The expected flow did not arrive until too late, and then these strong colonies being left to themselves threw off the largest swarms I ever saw. In three cases the swarms were so large that they completely filled a bushel measure.

It seems that this system could be carried much further with decided advantage. We will suppose that all the hives have been drawn up into groups of three. When swarming is expected we go to group No. 1. We find that all of them are preparing to swarm. Accordingly all are removed and carried away to a new location where they are set down side by side again. A single prepared hive is left on the site they were taken from.

We now proceed to group No. 2. On examination we find that two of the hives are preparing to swarm, and that the third one is not. In this case we should smoke the latter well, and place it in the center of the group, if not already there, and carry the other two away. The smoke would prevent fighting, which is never bad at swarming-time, for the bees are too busy with the flowers to have much time for fighting. This hive will now be even stronger than that which replaces No. 1, for one entire hive remains instead of only its field bees.

This hive could be counted on to start preparations for swarming very shortly, so that it also would need to be moved in, say, ten days or two weeks. Bearing this fact in mind when moving other hives, after a lapse of two or three days I would set down two others near it, and then at the time for the second move the three could be worked again together.

At group No. 3 we might find that only one colony was preparing to swarm. In that case it would be better to cut out the queen-cells from that one and give some of the brood from it to the other two; then at the next visit the three would all be in about an equal condition.

In this locality swarming is the great trouble. It is natural that they should swarm, and they will do it. They swarm for about four months. Last year I spent days and weeks cutting out queen-cells, and it was little better than wasted time. If one cell is missed (a very simple thing to do), all is undone. I am sure the moving would give much better results, and not be a quarter the work. They would, as you say, think there was a famine in the land, and cut out the cells themselves.

Of course, the old hives would soon swarm, if left to themselves, after the first shift; therefore when moving I would set them down again in groups of three. As soon as they were again getting ready to swarm,

say in ten days or two weeks, I would move all three away the second time, putting an empty hive on the second location, and so the process would go on. The plan would require considerable judgment to make it a success, but I think it could be carried out.

The new hives which stand where groups had been must not be forgotten. With so strong a force of bees they too will soon think of swarming. If given only a queen-cell each they may keep quiet for a month. I should reckon, however, that, after two weeks, when moving other hives, it would be well to set down on each side again, making a group in the place where we first started, to be again moved on in its turn when the proper time arrives.

Whenever a hive is found to be queenless, that would be the one to leave on the old stand, supplying it with either a queen or a cell.

In carrying out this plan it would be absolutely necessary to keep some record of the dates when changes were made, so as to know when to look for the next change being needed. I should say a pocket diary would be best; also, on making a change, to enter the numbers of the hives on a page ten days or so ahead; then when that day arrived the operator could look up the condition of those hives mentioned. This would be more satisfactory than searching on back pages to find out when certain changes were made.

I should like to know what you think of my plan. I would remind you that, years ago, Mr. Danzenbaker, in his little book, *Facts about Bees*, advised us to move away strong hives and place swarms on their stands, and so get the advantage of all the flying bees from the old hive as well as the bees of the swarm. We seem to have forgotten that our ways are not new, but that they have been recommended over and over again in slightly different ways.

One objection that could be raised against this system is that one could never tell which colonies produced the most honey. That would make no difference to one who did not breed his own queens.

Fernhill, Napier, New Zealand, June 15.

[As you have probably seen since we published the details of the Sibbald plan, we tested it in our outyard and did not find it entirely satisfactory, owing to the fact that the bees manifested a strong tendency to go back to their old hive, even after the positions had been reversed. Your plan would obviate that trouble entirely; and I am of the opinion that it would stop the swarming, destroy cells, and make a tremendous working force of bees. The only objection I can see is that it involves a large amount of work, lifting and carrying heavy hives, even in the midst of the honey-flow, not one or two feet, but quite a distance away. I should be glad to have suggestions and criticisms from those who have tested the Sibbald plan this season, and especially from those who may have tested something similar to this. —ED.]

SWEET CLOVER.

More Proof that Stock will Eat it.

BY A. C. ARMSTRONG.

I wish to take exception to the statement, page 904, that stock will not eat sweet clover except under compulsion. A neighbor who has a small place, 13 acres, and who works on the railroad, raked up a lot of it that was cut (about the time it began to bloom) along the tracks, for bedding for his horse and cow. He put it in a stack, three or four tons of it, and bedded both the horse and cow; and, to his surprise, they ate it greedily, and left good clover and timothy hay in the manger for the sweet-clover bedding.

Along the roadside near my place there was a lot of sweet clover growing, and the highway overseer caused it to be cut, raked up, and ordered it burned. I saw some manure in it, and hired a team to haul it on to my land. We had four good big loads of it. I put it on a poor sandy knoll in the pasture lot. There were 15 head of young stock and my cow in the 35-acre field, and they had good feed, but they left grass to eat the roadside sweet clover, and they ate it clean—stalks and leaves.

I cut a little of it this summer with other grass, and fed it to my horse, and he will pick it out of the other grass; and I have noticed the horse sort it out of alfalfa, as I have fed my horse alfalfa all summer, cut fresh daily, and there is some sweet clover mixed in it.

I have also tried to seed some of the 35-acre pasture-field to sweet clover for my bees, and sowed about two bushels of seed two years ago. It came up nicely, but the stock ate it all off so short it has not blossomed.

Since Aug. 1 I have given up the pasturing of stock. The clover is starting up, so I have some late sweet clover for my bees, and they have found it. May be it's the locality. Kansas alkali soil produces a plant so strong that it can't be eaten, while York State does better. Different soil will produce onions of different strength, and why not sweet clover?

On our soil I would as soon have sweet-clover hay, pound for pound, as alfalfa. I have known of two instances where parties have bought alfalfa seed that was badly mixed with sweet clover, and they had no difficulty about feeding the hay. When it is cut early it makes first-class hay.

Warner, N. Y.

[When I read the first line or two of your article I wondered how it could be that I allowed a statement that stock would not eat sweet clover to go in our columns unchallenged. On referring to the page in question I find the statement was made by Professor Richards, botanist of the Kansas Experiment Station; but it was in no sense indorsed by Mr. Green, who merely exhibited it as a sample of inexcusable ignorance on the part of a man who ought to have known

better. The average reader of a bee paper knows that stock will eat sweet clover, and consequently Professor Richards' statement needed no denial. We have had any amount of proof that stock will eat it when it is cut early enough. This only goes to show that the 'National Bee-keepers' Association, the Honey-producers' League, and the various State bee-keepers' associations, should take measures to secure the repeal of the laws in the various States classing sweet clover as a noxious weed, and therefore to be cut down by the street commissioner or road supervisor. The time will come, of course, when these laws will be repealed, but not until bee-keepers bestir themselves a little more actively than they have been doing. The majority of our experiment stations, I think, are on record as saying that sweet clover is an excellent fodder; that it is not a noxious weed; that it grows only in waste places, and is always killed out by cultivation.

The trouble with some farmers is that they are a little in the position of the dog in the manger. If they imagine that their neighbor bee-keeper derives some benefit from a certain plant, or from their alfalfa or clover fields, they feel that they have been robbed. When they see bees working on sweet clover they want it cut down, and therefore are instrumental in getting it recognized as a weed.—ED.]

THE LESSER WAX-MOTH; INFORMATION WANTED.

U. S. DEPARTMENT OF AGRICULTURE, }
Bureau of Entomology, Division of Apiculture, }
WASHINGTON, D. C., Sept. 13. }

Mr. E. R. Root:—It has come to my notice that the lesser wax-moth, *Achroia grisella*, has been found in this country, and I am anxious to learn how widely it is distributed. I shall appreciate it very much if any of the readers of your paper who have any specimens of this moth in their apiaries will notify me of that fact and send samples of either larvæ or adults. I shall be glad to send on request a return frank to any person wishing to mail any specimens to me, which will make it unnecessary to pay postage. In order that this moth may be distinguished from the common wax-moth, *Galleria mellonella*, I will give a brief description.

The adult moths are little more than half the size of the common moth, and with wings spread they measure about $\frac{5}{8}$ inch. The fore wings are considerably darker than the hind, and a very characteristic feature is the swiftness of movement of the insects. The tunnels are similar to those of the common moth, but smaller in diameter, and the cocoon at the end in which the pupa is found is considerably smaller. Wherever found in America they are due to importations, since this is a European species. Bee-keepers need not fear this moth any more than the larger one, for it is well known that there is one sure prevention for moths; and the rule of every bee-keeper, whether troubled by

moths or not, should be, "Keep all colonies strong." This will, of course, not keep the moths away from stored combs. This moth is also said to thrive well in dried apples. There is an excellent illustration of both bee-moths in the A B C of Bee Culture, p. 54, but the name is misspelled in the text.

E. F. PHILLIPS,

Acting in Charge of Apiculture.

H. G. QUIRIN.

The Queen-breeder, Honey-producer, and Supply-manufacturer.

BY E. R. ROOT.

I suppose it is hardly necessary for me to introduce H. G. Quirin to our readers—the man who has advertised so extensively, and who lives at Parkertown, near Bellevue, O. Some two or three months ago an extended write-up of him and his business appeared in one of the Cleveland papers. Some of the statements of the reporter were reasonably correct; but when he came to figure out Mr. Quirin's earnings for a year he made them so big that it threw the alleged profits of Standard Oil clear into the shade. Raising queens and producing honey was, according to the reporter, the greatest snap in the world, for Mr. Quirin was getting rich, hand over foot.

I happened to visit Mr. Quirin soon after this newspaper article appeared. He admitted that a reporter had come to see him; that he reared without help 3000 queens. Where the reporter made the mistake, he said, was in figuring the average price secured for his queens at \$2.00. If he produced 3000 queens in a season that meant in the neighborhood of \$6000 for his queen business alone. The honey-production part of the business made this sum swell to nearly \$8000 per annum according to the newspaper man. What are the facts? Mr. Quirin is a young man of German extraction, rather under medium height, but of wiry build. He is a tremendous worker; in fact, I never saw a man in any business, unless it was a mold-er working by the piece, who would work at the race-horse speed Mr. Quirin did. He would visit and work at a tremendous pace. It evidently did not pay him to walk from one part of the yard to the other—he simply ran. If a hive happened to be in his way, rather than take time to go around it he would jump over it—if it were not too high. Yes, I saw him run with his hands loaded down with supers filled with comb honey. All his movements around the hives were very rapid, except in removing the cover or in taking out the frames. When he started to shake the bees out of the supers of comb honey he would leave Mr. Heddon or any one else clear in the shade. The bees would rattle out of the supers like so many beans—just had to.

It is true he rears about 3000 queens without any help whatever, from the grafting of the cells clear up to the addressing and mailing. He has 450 strong colonies of bees



QUIRIN'S HOME APIARY AND QUEEN-REARING YARD, AT PARKERTOWN, OHIO.



QUIRIN'S TENEMENT HIVES RUN FOR COMB HONEY AT HIS CASTALIA YARD.



QUIRIN ABOUT TO OPEN HIS TENEMENT HIVES.

and six outyards, and queen-rearing nuclei—well, I forgot to inquire. These 450 colonies in their several yards he handles also alone.

What else does he do? He not only makes his own queen-cages, but a large portion of his own supplies as well as some for his neighbors roundabout, for he has a wind-mill and a power buzz-saw; and when he

can not be on the run outdoors he can be on the jump inside, making needed things for the next season. One might suppose that he assumed this hot pace just while I was at his place, simply for effect. The fact is, others who had visited him said this was his normal pace. Nor is this all. He maps out his work each day, and plans to finish just



QUIRIN SHAKING BEES OUT OF SUPERS OF FINISHED SECTIONS.

so much. He apparently does not think it pays to waste time in sauntering over the yard, scratching his head, and thinking what to do next. It is all planned out ahead; and all he has to do is to make those poor arms and legs not only get busy but *keep busy*.

I have traveled many thousands of miles, and have seen bee-keepers east, north, and south work their bees. I have seen Coggshall in his kick-off-super act; I have seen some of his lightning operators at work; but I must say that Quirin, if the other fellows are lightning, is *greased lightning*. How long he will be able to keep up this rapid clip no one knows.

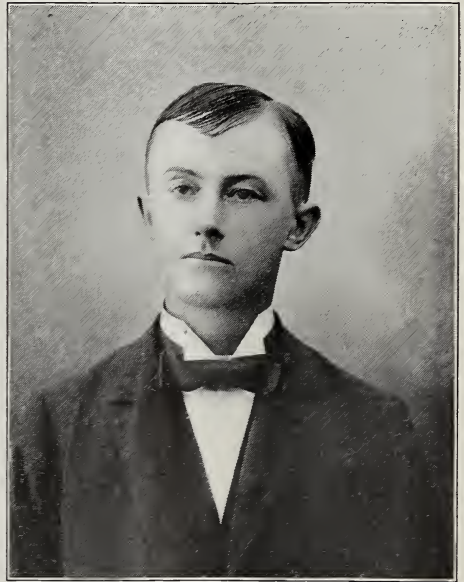
Now, having watched the man at work let us look into his methods. He is, first of all, a queen-breeder. The mere fact that he can raise 3000 queens and do his other work shows he must be extraordinarily expert. I asked him whether he had used the baby nuclei. He said he had; but the larger-sized boxes of bees gave him better results. It took less of his time. He would rather have a little more invested capital in the size of the baby nucleus, and less work, than a smaller box of bees and more work. His nucleus consists of two frames made by cutting an L. frame in the middle on a perpendicular line. Each half is then inserted in another frame, and two of them together are put into a box of the right dimensions to receive them. Two of these boxes were combined, end to end, into one long one. If you can imagine an ordinary Langstroth two-frame nucleus box which you cut into halves transversely by means of a partition you will get some idea of the nucleus that he uses. Why he did not combine these two boxes side by side so that the cluster of one compartment would warm the cluster of the other I did not think to inquire. When I questioned him about the very small baby nuclei not running satisfactorily he said it was merely because they would not hold laying queens, and brood would fail to mature. The larger boxes of bees would hold their own queens, and mature brood, and that has been just the experience of the Root Co. during the past summer. But we shall have more to say on this subject in a future issue.

A sort of birdseye view of Quirin's queen-rearing yard, as well as his honey-producing yard at home, is shown in the larger illustration. The photo was taken from the tower of the windmill, looking toward the west. The long boxes scattered here and there, each containing four half-sized Langstroth frames, are seen in the foreground.

The other views show snapshots of him while at work at his Castalia yard, where he has some 40 colonies, all in quadruple tenement Langstroth hives—four colonies in a hive, with only a thin cross-partition separating. He uses the ordinary super for comb honey, and these are placed in the upper story of the tenement hives. The warmth from the four clusters and the large protecting-case over and around the supers he regards as an important factor in honey production.

At each corner of the hives, as will be seen, there is a sort of bar or fender that projects out. The purpose of this is to divide the flight of the bees.

In one of the views he is shown in the act of shaking the bees out of the super; and I much regretted that there was not a moving-picture photographer there to catch Quirin in his greased-lightning act. He uses no bee-escapes, but shakes the bees out in front of the entrances of the hives from which the supers came. At the time of my visit (the fore part of August) the bees were working briskly storing honey in the supers. The hives are located under a row of apple-trees directly facing quite a pool of water which is fed from one of the monstrous springs that are found in that vicinity. At Castalia, it will be remembered, where this yard is lo-

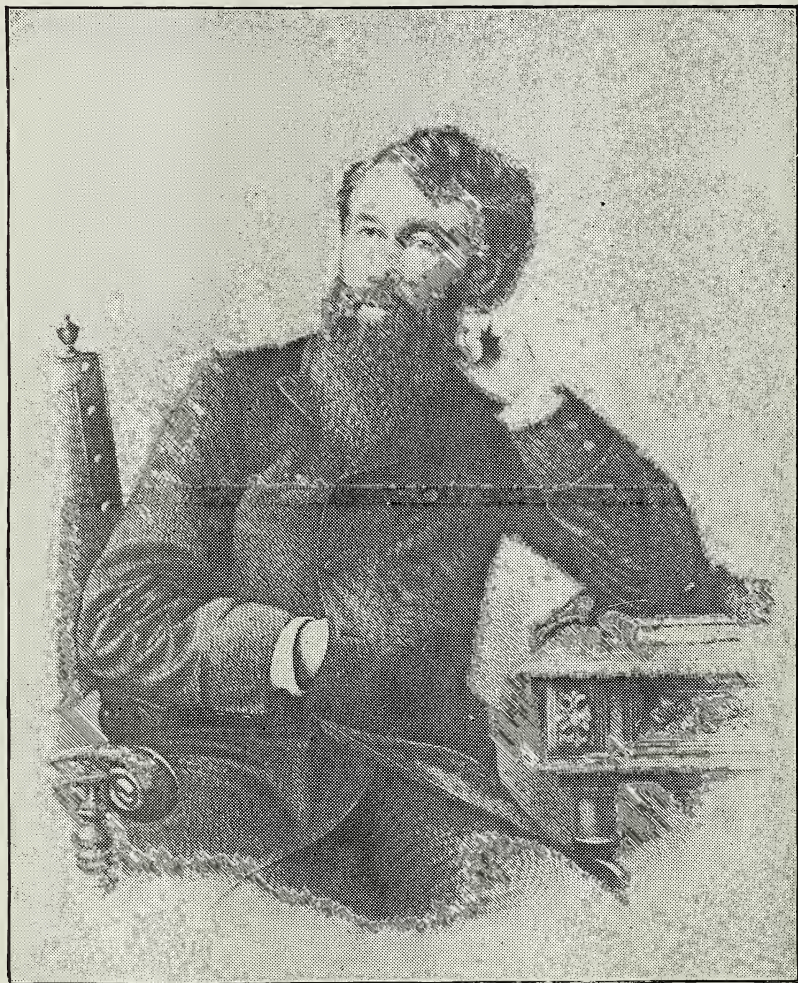


H. G. QUIRIN.

cated, is a sight that is well worth the travel of a hundred miles to see. It is called the "blue hole." A river of water comes out of the ground, apparently from nowhere; and as one looks down into the hole he seems to be looking into a bottomless pit. I am told one can see objects quite distinctly 60 or 70 feet below the surface of the water, so clear is the water. There appears to be an immense river under ground somewhere here, and in some places this water wells up to the surface. Quite a good-sized stream or trout-brook is fed by the aforesaid pool. Mr. Quirin, notwithstanding he has had a yard for several years located near this pool of water, had never seen it. He knew that people were coming from hundreds of miles to view this natural wonder. Why had he not gone to see it? Because he had been too busy. But as I was there that day, and

was going to see it, he would take time enough to take a look. We all got into the automobile, and (would you believe it?) the thing would not move. *It took me six hours and a half* to get the thing started. As Mr. Quirin could not wait that long — in fact, he

had urgent business in town — he left me in a few minutes. The fact was, I had had my machine washed out at a garage, and a boy had turned a stream of water all over the bonnet, getting quite a quantity of water in the gasoline-tank.



—By courtesy of Kellogg & Co., New York.

J. B. Davis

See Health Notes, page 1032.



FIVE-BANDED BEES OR GOLDEN ITALIANS.

"Say, Doolittle, got time to talk a few minutes about bees?"

"Yes; always have time to talk about them. Ever know a man who did not have time to talk about the thing he was intensely interested in? It is those things which are uninteresting that a person has not time to talk about. Talk to a poultry enthusiast about chickens, a dairyman about cows, a motorist about autos, and any one of them will take time to listen to you; but talk to a rumseller about temperance, or a worldling about the religion of our Lord Jesus Christ, and they have no time for such things. I am an enthusiast on the bee question (also on some other things). What do you wish to talk about in the bee line this morning, Mr. Jones?"

"I wish to know if the golden Italian bees are a different race from the leather-colored Italians; or were they bred from the dark or imported Italians by choosing the light-colored queens to breed from?"

"According to my opinion, the Italian bees, no matter what their coloring, are not a fixed type or race of bees as are the German bees, or what are more commonly called 'black' bees."

"That is strange. What would you call them?"

"I consider them a variety, or what might be more properly called a thoroughbred, the same being brought about by the environments of their home during many generations and centuries, the environments largely being the snow-clad Alps in Italy. If I am correctly informed, the first importations of these bees to this country were quite dark—more so than the importations of the present day."

"Then you think selection had something to do with the matter?"

"Yes. Early breeders of these bees found that they were liable to 'sport,' as it is called; that is, some of the queens reared would be almost entirely black, while others would be striped with yellow, and still others a beautiful yellow nearly the whole length of the abdomen; and the longer these Italian bees stayed in this country the more yellow they became, even where no special attention was paid to the matter of color."

"But the goldens of to-day did not come about in that way, did they?"

"No. After a little some of the earlier queen-breeders saw a profit in the beautiful yellow shown by some of the Italian queens, a few generations removed from the imported stock, so they began breeding along this yellow line. Notable among these were the

Rev. H. A. King, of Ohio; Mrs. E. S. Tupper, of Iowa, and Jos. M. Brooks, of Indiana, the latter seeming not only to breed for color, but for all of the other good qualities possessed by the Italian bee; and if there is any thing of praise to be said for the golden Italians of this day, this man Brooks should come in for his share, for there are few if any very yellow *Italian* bees in this country, at this time, but what sprang from stock which originally came from his apiary."

"Why did you put emphasis on that word *Italian*?"

"Because there are very many yellow bees in the United States which came from Cyprian stock originally; and this yellow breeding has been carried to such an extent that, in the very yellowest specimens, the queens do not show the least bit of black on their abdomens, and the drones' abdomen is nearly a solid mottled yellow, while very many of the workers are a solid yellow except the tip or point of the abdomen, which is of a brownish-black color."

"Do I understand that such bees as these came from queens whose original progeny were very dark, and many of the queens and drones nearly or quite black?"

"Yes; and as this color is of such a rich orange or gold, these bees are very properly called 'golden Italians;' but, aside from those having Cyprian blood in them, all originated from queens imported direct from Italy, being brought up to their present standard as to color by selection. In view of this, do you wonder that I object to such a strain of bees as this being called *pure*?"

"No. But one more question: Are golden Italians what are called by some people five-banded bees?"

"Yes. The worker bees from an imported queen direct from Italy show two colors on each of the three horny scales or segments of the abdomen, next to the thorax. That on each segment nearest the thorax is of a leather color, and that furthest from the thorax being of a very dark brown or nearly black color. This gave birth to the expression 'three-banded bees.' As the breeding toward the yellow progressed, some individual workers were found having a very narrow stripe of yellow on the fourth segment of the abdomen, and with this stripe came the contention that the Italian was *not* a pure race of bees, but a mongrel or thoroughbred; for, if bees showing three bands are pure, what are those showing yellow on four bands?"

"Yes, I see now. I had not thought of the matter in that light before. Go on."

"As the breeding for yellow continued, that on all the segments became wider and wider, the yellow encroaching on the black or dark more and more, all the while, until individual specimens began showing a very minute yellow stripe on the front edge of the fifth segment; which gave rise to the present term, 'five-banded' bees."

"That seems easy, I am sure. But some of the golden Italians are not thus marked, are they?"

"As this yellow on the fifth segment increased, the dark or black stripes on the first, second, and third segments vanished altogether; and, as progress continued, the black finally disappeared on the fourth segment also, which made such an individual worker bee appear something like a lump of gold as it sported in the sunshine in front of its hive; and some writers told of the lumps of gold, as such bees appeared to them, when seeing these young yellow bees on their first flight. This gave birth to the name 'golden' Italians."

"Then the five-banded bees and the golden Italians are one and the same thing?"

"Yes, only the goldens are a little more advanced in the race toward the orange-yellow line than are the five-banded. While this is so, the two terms are very largely used indiscriminately, both being applied to the very yellow bees of to-day. But the term 'golden Italians' is the better of the two."

"Thank you very much for this talk. It will help me very much in understanding better what I read about these bees."

"But what is the general verdict of the masses about the utility of the goldens as compared with the leather-colored or the three-banders?"

"Seems to be about equally divided. The goldens having Cyprian blood in them are very vindictive, and for this reason many are opposed to them; but the queen-breeder has more calls for the goldens than for any thing else, and that in spite of the desire on the part of some to make it appear that the three-banders are the best of all bees."



OUTDOOR FEEDING; SOME SUGGESTIONS FOR PREVENTING ROBBERY.

I have read with much interest your article, page 855, on outdoor feeding, and there are some questions about the matter for which I should thank you for answers; and I have one suggestion on which I should like your opinion. I have 13 colonies of hybrids, and one to which I recently introduced a queen from your yards. I wish to feed only enough to keep up brood-rearing, as my hives have nearly enough stores for winter, I believe. Suppose I should try the plan, feeding only a little daily, would not the bees be inclined to rob in the after part of the day, when the feed is exhausted? My suggestion for preventing this is as follows: Make fruit-jar feeders as described in a recent issue of GLEANINGS, leaving room on the grooved board for a second fruit-jar, which is to be placed in a slight depression

in the board, and filled with very dilute honey or pure water. While the first jar contains honey, the atmospheric principle would work, letting down only the richer food; but as soon as that is exhausted the other jar would begin to pour out its contents, diluting the food until the feed already in the grooves would be diluted until the bees would consider it not worth the taking. What is your judgment on the plan? Suppose I should substitute Mason jars with perforated caps for the 60-lb. can: how many of these would it take to accommodate my 14 colonies? and how much feed should be used daily, for the purpose of keeping up brooding? I think I shall not need to feed before frost, as there is considerable heart-ease here, and some white clover. They are getting a little pollen from plaitain. Little or no trouble from robbers as yet.

O. W. BRACKNEY.

Wapakoneta, O., Aug. 25.

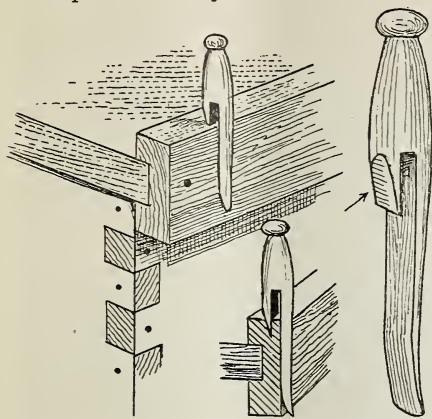
[As you have only so few colonies, the same need for feeding outdoors to prevent robbing would not exist as in the case of a larger apiary. If the entrance were contracted down to about $6 \times \frac{3}{8}$, there would be no robbing unless you were doing a class of work requiring the opening of the hives pretty often. As you are having a good honey-flow just now, or were at the time you wrote, my suggestion is that you do all the manipulating of your colonies, so far as possible, at this time. In cool weather there will be no robbing, as the bees will not fly; so, taking it all in all, I do not think you need to do any outdoor feeding.]

While your plan of putting two Mason fruit-jars at a time on a grooved board, one containing a very weak syrup and the other a very strong one, is quite ingenious, yet there will be no particular trouble when the bees have exhausted all the syrup unless you wish to work the hives just about this time. For an apiary so small, probably two or three Mason jars with perforated caps would be sufficient to keep the bees busy for a day or two longer. An inverted can with perforations is far better than the grooved-board plan. These cans should be elevated to quite a height, as mentioned in the editorial department, last issue, page 955, where this subject is discussed more at length.—Ed.]

STANDING FRAMES; A CLOTHESPIN USED TO INDICATE THE CONDITION OF A COLONY.

In commenting on my standing frames, p. 482, you say, in the footnotes, that the trouble is that frames of this kind would have a tendency to topple over against their neighbors because there would be nothing to hold them together when one is pulled out. I wonder if you tried long enough to get used to them. If the hive is level, and you have wide bottom-bars, they will not topple over unless there should be some that are heavy with honey on one side near the top while the other side is light of honey. Such frames, when used, should be moved around

so that they will stand slanting instead of standing parallel with the others; or if you have a little wedge to crowd this frame against the opposite end it will stay up while you are at work on the others. A clothespin will do if you have one handy.



By the way, clothespins are the handiest things to use as marks to warn you that that hive wants looking after. Why use brick when it is so much cheaper and easier to take a few clothespins with you? To use them you want to cut off one of the prongs so it will drive into the edge of the cover and stay up. If you paint them some bright colors, say red, white, blue, black, or yellow, you can use them for different purposes. For instance, a white one could be used for the queen. You want to clip your queens. Now, as fast as you find one, and have her clipped, use a pin to note it; and if you don't happen to find your queen, leave your pin off and you will then know that that hive wants looking at again. Different positions will also help in indicating the condition of a colony.

Clothespins cost by the box about a cent a dozen, so you see they are not very costly. Pomfret Landing, Conn. J. L. HYDE.

[I have tried a clothespin in the manner here shown and was indeed surprised to see how firmly it imbeds itself in the cover.—ED.]

HONEY-DEW; HOME-MADE HIVES WITH 11×11-INCH FRAMES.

The trees here have been almost dripping with honey-dew several times, when a rain came and washed the leaves clean. When it stays on long enough the leaves have a glossy appearance as though syrup had been spilled on them. Some are white and frothy, in which froth you can plainly see grains of sugar. It is not confined to any tree. It comes on the leaves of four different kinds—oak, poplar, maple, and gum trees.

Is a hive containing ten frames 11×11 inches in size too large to give best results for 4×5 section honey? I average only 63 sections from those hives. It is one of my own construction, and holds ten frames in

the brood-chamber, single-walled, the sections being in a case that holds 21 4×5 sections, said case being slipped in from the back of the hive.

Would it be better to use eight-frame hives, or make my frames smaller, say 9×11 inches? D. G. MORRIS.

Lindsays, Va., July 10.

[The honey-dew in question was doubtless deposited by aphides. These insects will be found on all trees, no matter what species.]

A hive containing ten frames 11×11 would make a fair-sized brood-nest. Doolittle has used practically such a brood-nest for many years. His frames, however, are 11½ square; but his verdict now is that a brood-nest of that shape is not enough better than the regular standard Langstroth brood-nest of ten frames to warrant the expense of using something outside of the ordinary standard. If you change at all you had better by far adopt the regular Langstroth frame, which we believe to be the best size for the average beginner.—ED.]

A NEIGHBOR CAPTURES A SWARM AND CLAIMS IT AS HIS OWN.

In May I purchased from your New York house one colony of bees and complete outfit. Early this month I sent for another colony, and with both I am delighted. But, to come down to business, 'tis this: Late in June my first colony cast a swarm. I had watched patiently, and was on hand when they left the hive. I lost track of them for a few minutes, supposing they went toward woods at the left, but found later they went to the right, and were crossing the highway when a neighbor, in passing, saw them, and, reaching up with his hat, captured a bunch (pint) including the queen, and took them home. A few minutes later he returned to the place where he saw the swarm, where I had then gone, and on telling him that it was my bees, and that I was looking for them, answered that, if they were mine, why didn't I catch them? He kept the bees.

Now, the question is, "What is the law in New Jersey governing swarms? Had I a right to insist on this neighbor returning mine? I felt, as a matter of principle, he ought. If you can help me out by giving me some light on this subject, I shall be very grateful.

Will you also give me the address of the Bee-keepers' Association? I wish to become a member. GEROTHMANN MORSE.

Athenia, N. J., July 24.

[The common law which is operative in all the States where there is no special legislation covering the case provides that a swarm of bees is the property of the one who discovers and captures it, providing the original owner has lost sight of it, even though he might have been in pursuit of the bees; so that, legally, unless there is some special law in your State (and I do not think there is), covering the point, the bees belong to your neighbor; but on moral grounds he ought to surrender them to you.]

By joining the National Bee-keepers' Association you can secure a pamphlet giving the law relative to bees in all the States, as well as the common law where no special statutes are in existence. To become a member of the Association, write to the General Manager, N. E. France, Platteville, Wis., inclosing one dollar.—Ed.]

DRAWN COMBS VS. FULL SHEETS.

I should like to know if a good strong colony of bees will gather more honey if given full-drawn combs than if you give them some drawn combs and some full foundation to draw out. If so, what becomes of the wax which would be emitted through the wax-glands for comb-buildings?

Providence, R. I. WILLIAM SEALE.

[It is generally stated that bees will gather more honey with drawn combs than with foundation and drawn combs, although there are conditions when foundation may be given with practically no loss. It is a mooted question whether bees secrete wax when they do not need it; but I think the best authorities are of the opinion that, when there is no comb-building, there is no waste of wax scales. In fact, none are secreted in the first place. If this is true, then drawn combs would enable the bees to furnish actually more extracted honey than frames containing merely foundation. As a matter of fact, more extracted is actually produced in the generality of cases when drawn combs are used. This would be a proper subject for the experiment stations, and I here offer the suggestion that the general government have this matter tested.—Ed.]

WORMS ATTACKING THE UNHATCHED BEES.

Not long ago I had a hive of Italian bees. I failed to put the zinc queen-excluder on the hive; and the consequence was, the queen laid eggs and took my sections for her nursery (I use a 3-lb. section, and find my bees take well to them). Upon examination of this particular hive I decided to allow the brood time enough to begin hatching well, and then put on the excluder and put the queen below, which I did. Not long thereafter I noticed signs of web-worms, and on opening the section-case I found lots of hatched bees had gone below, but scores of brood in patches as large as the palm of my hand were alive, but still in their cells laboring to get out. I also noticed some that had gotten out had cut wings and small pieces of web on them. I found that small worms had gone in and had not only fastened these bees to their cells but were feasting on them. Scores of them were in the comb at the base of the cells, and looked like the small web-worms we usually see, but longer. I made a fire and burned them. They did not attack the honey at all, as the regular web-worms do, but imprisoned mature brood and ate them. I rid the hive entirely of them by cutting that part of the combs infested with them, and now that

hive is in good condition, with no signs of them. Please tell me if this is an old enemy or a new one, as I never had any experience with them before.

L. L. BROCKWELL.

Edlow, Va., July 25, 1905.

[The case described is nothing more nor less than the old familiar moth-worms that have built galleries and webs into the worker brood. They very rarely make any depredations in hives having Italian blood, and, consequently, we advise introducing Italian blood into every colony. For full particulars regarding this bee enemy, see under heading of "Bee-moth," in our A B C of Bee Culture.—Ed.]

RED-CLOVER STOCK—WHAT IS IT?

In your issue for August 15 you speak of your red-clover breeder being dead. Will you kindly tell your readers, the majority of whom, I fancy, could not tell exactly what a red-clover queen is, just what kind of bee you and other red-clover bees are, anyhow? Are they pure Italians, golden, leather-colored, three-banded, or what?

R. STUEHCK.

Arlington, Oregon, Aug. 23.

["Red-clover" is the name applied to a strain of bees direct from Italian imported stock which shows a disposition to work on red clover when other bees will do little or nothing on it. By this it is not claimed that the bees of all the queens of this blood will work on red clover every season and everywhere. In some localities red clover apparently yields no honey at all, and it is equally true that some of our red-clover bees may be no better than ordinary Italians. This strain is also quite remarkable for the amount of honey it will gather from any source. The bees of the original stock had tongues $\frac{3}{16}$ of an inch long; that is to say, they had a tongue-reach of that length. While this is not long enough to reach to the bottom of some of the longer red-clover tubes, it is sufficient to reach the nectar in some of them.—Ed.]

SHOULD A COLLEGE GRADUATE TAKE UP APICULTURE FOR A LIVELIHOOD?

Having just graduated from college I am now casting about to find a permanent business that will be to my liking, and result in large remuneration. I should appreciate greatly any information that you may be able to give concerning the profits that are now being made in large apiaries. In case I should desire to go into this business I should like to know that money could be made in raising bees on a much larger scale than the general average.

F. L. BENNETT.

Rochester, N. Y., Sept. 4.

[I desire to be entirely frank with you, and say that the average college graduate could probably make more money pursuing some other calling than that of bee culture;

but bees will yield as much money as any outdoor pursuit, and a great deal more than the poultry business on the average. Ordinarily I would not recommend bee-keeping as an exclusive business; but it works in very nicely with some profession, for the reason that it affords recreation for mind and body after mental work has been performed.—ED.]

GIVING FRAMES OF HONEY TO COLONIES THAT ARE ALMOST READY TO WORK IN THE SUPERS.

Suppose I have a few weak colonies of bees that are not strong enough to work in the super; but they have three or four heavy frames of honey; how would it do to take a part of their frames of honey from them and put the honey in a colony of bees that is about ready to go into the super? As some bees will not work in the super until they have filled the brood-frames with brood and honey, these fat combs of honey would undoubtedly hurry them along, and one week sooner in a good honey-flow means money to the bee-keeper.

Velpen, Ind.

W. T. DAVISON.

[The plan you speak of would be feasible in the case of both colonies under consideration; but the manipulation might not in all cases work out as expected. It might induce swarming to the colony to give so much sealed stores at once.—ED.]

THE PLAYSPELLS OF YOUNG BEES.

Will you please tell me what the trouble is when bees constantly come out of the hive, as if they were about to swarm, and then go back in? They also act as if they were fighting, and very angry. How do you proceed to change a swarm from one hive to another? How do you divide a swarm, and detect and get hold of the queen, etc.? What is the best way to protect them from severe winter weather? I have five colonies, and I find some of the hives are molested by the moth-miller. How shall I proceed to exterminate them, and to protect the bees from this pest in the future?

H. S. SCHOFIELD.

West Olive, Mich., Sept. 4.

[It is very evident that your bees have been having playspells. Young bees will often deport themselves in the air in front of the entrance very much as if they were swarming. At other times it will look as if robbing were going on. The condition is perfectly normal; and if it is a playspell you will find in half an hour or so that the merry hum of the bees will have stopped. Your other question involves such extended answers that you are referred to our A B C of Bee Culture, or any other standard textbook on bees.—ED.]

PARTHENOGENESIS EXPLAINED.

If the drones from a pure Italian queen that has been mated to a black drone are

pure Italian drones, or, in other words, if meeting the drones does not change the breed of drones, then if I start with pure Italian queens it does not matter how many black drones I have or how many mismated queens; or if the 16th generation of bees in the past was Italian, then the drones from these queens that mated with black drones every time would be pure Italians. Of course the workers would be blacks.

Velpen, Ind.

W. T. DAVISON.

[This was referred to Dr. E. F. Phillips, of the Department of Agriculture, Washington, D. C., who replies:]

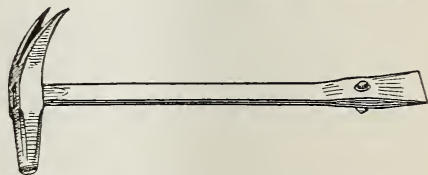
According to the theory of parthenogenesis, which is now very well established, drones are of the same race as the queen which lays the eggs; therefore, if an Italian queen is mated to a black drone all the drones from this queen are pure Italians. If from this queen a second queen is reared she will be half Italian and half black. According to this theory, then, the drones from the second queen will be half Italian and half black, and not, as you suppose, pure Italian. For the third generation the queen would be one-fourth Italian and three-fourths black, and her drones would be a blend of these two races in the same proportions.

E. F. PHILLIPS,

Acting in Charge of Apiculture.

NEW HIVE-TOOL.

I send you a model of the hive-tool used here. It is the most complete thing I have seen. It is made from a big file. The end



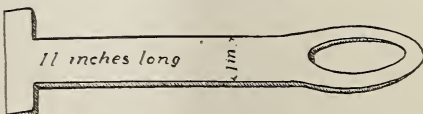
is pounded down and formed into the hammer and claw. The scraper end should be sharp. The little plug is put there to protect the thumb when prying supers apart. The tool will stop when pushed up to the plug. Bee-keepers here never think of taking any other tool to the bee-yard than this.

Longmont, Colo.

C. F. WILSON.

GOOD DEMAND FOR BULK COMB HONEY; HIVE-TOOL ATTACHED BY A RUBBER BAND INSTEAD OF A STRING.

This year the local demand for bulk comb honey is better than usual; in fact, the supply is not sufficient for the demand for first-class comb and extracted honey.



I see Mr. Fowls has what he calls the best hive-tool ever invented, p. 590. Here

is a description of a tool that I use, and consider the best out—at any rate, away ahead of a tack-puller. It is made of steel, $\frac{3}{8} \times 1$ inch, 11 inches long; one end has a loop widened out to about $1\frac{1}{2}$ inches, and then pointed so as to form an easy handle. The other end is $1\frac{3}{4}$ inches wide, and square cut at the end, which is thin, and reasonably sharp.

It is used to pry open hives and supers, clean off burr-combs from the top-bars of frames, covers, and section-holders; also to cut loose any brace-combs; as it is long and thin it can be run down between the outside frames and the side of hive to cut braces sometimes found there. It can be run under the covers and supers and given a twist to loosen frames that are hanging by burr-combs. Instead of a string a yard long I use a rubber band about half an inch wide, attached to the button at the side. It is always there, and does not wrap around your legs as you walk, as does the long string used by Mr. Fowls and others.

Sabinal, Tex.

A. G. ANDERSON.

[A rubber cord that will stretch, in place of a string or a chain, I feel sure is decidedly better than something of fixed length, a good deal longer than need be sometimes, and not long enough at others.]

The design of the hive-tool as shown above is excellent; but I am not sure but it would be better if the scraper end were bent at right angles so that the tool could be used something like a miniature hoe in scraping bottom-boards, and burr-combs off from brood-frames.—Ed.]

BURLAP OVER OR UNDER THE HONEY-BOARD?

June 15, page 643, about Mr. Burt's plan of using burlap over sections, does he place the burlap *over* or *under* the honey-board? I tried this scheme this year, placing the mat over the sections and honey-board on top. Result, bees propolized the mat fast to the edges of all sections, and entirely too much so to make it pleasant handling or nice-looking sections. If the same good result as to warming the super can be attained by placing the mat *over* the honey-board, and using the telescope cover, I shall adopt that plan.

J. A. PHILLIPS.

Washington, D. C.

[The burlap should be put on *top* of the super-cover or honey-board, and not under. No wonder you got your sections all daubed up with propolis.—Ed.]

REARING CELLS IN A HIVE WHERE THERE IS A LAYING QUEEN.

Please let me know if the following plan is proper: I have a colony which has an old queen, and another colony which is doing excellently in every way. I intend to place a queen-excluding division-board between the brood-frames to induce the bees to raise queen-cells. When they do I intend to cut out one of the cells, place it in a Titoff cage until hatched, leaving it in the same colony,

then kill the old queen in the other colony, and introduce.

A. B. MANETT.

San Antonio, Texas, Aug. 16.

[It is not quite clear just how you intend to proceed in the matter of requeening; but if we understand you correctly you propose dividing off the brood-nest in halves by means of perforated zinc, and you assume that queen-cells will be started in that portion of the brood-nest from which the queen is excluded. This might happen under certain conditions; but as a general rule you would have to give this portion some grafted cells, said cells containing young larvæ and royal jelly. The bees would then draw out complete nine-tenths and possibly all of the cells. Such a division will take care of about one dozen cells usually.—Ed.]

HOLDING TRANSFERRED COMBS IN FRAMES WITH RUBBER BANDS.

In transferring comb from one size frame to another, or from a box to an improved hive, why not throw away the splints and strings used formerly, and use medium strong rubber bands? Stretch a band over each end; and if the pieces of comb are small one can be placed in the center of the frame. In the manipulation of the frames after the bees have fastened the comb to the wood, press the blade of a sharp knife on the bands where they cross the top-bar and they will fly out of the way. Page 819.

Nisbet, Penn.

GRANT STANLEY.

[Your suggestion of rubber bands is most excellent, and I believe it is ahead of any thing else that has ever been suggested. They are now so cheap that the cost would be practically nothing. After the bees have got the combs fast in the frames it would not even be necessary to remove the frames. Just run a sharp knife over the top-bar through each rubber band and they will fly off the frame quicker than you can say it, down on to the bottom-board. The objection to a string is that the bees do not always gnaw it away. Practically it is necessary to remove the brood-frame, cut the string, and then unwind. The suggestion of the rubber band is worth considerable, and I have marked it to be incorporated in our A B C of Bee Culture providing it proves to be satisfactory in our bee-yards.—Ed.]

THE LEWIS WIRE SPACER FOR FRAMES, PAGE 549.

I am bothered with letters from all over the continent about that wire frame-spacer, and would be obliged if you would state in your journal that I am not making nor selling them. If you don't care to make them they are free for anybody else to make. The criticism of yours is remarkable; for if the spacers are properly made there is no truth in a word of it. I judge by my correspondence that, generally, bee-keepers think as I do.

W. H. LEWIS.

New Westminster, B. C.

[If our correspondent will try these frames on a large scale, and test them where propolis is bad, I think he will see objections to the spacer that do not now appear to him.—Ed.]

FIBER OR LEATHER WASHERS FOR FRAME-SPACERS.

In *Stray Straws*, p. 805, Dr. Miller says, "Use nails with heads $\frac{1}{4}$ inch thick." If one can not get them I should think he could cut soft spongy leather $\frac{1}{4}$ inch thick or slightly more in squares or disks about $\frac{3}{8}$ inch in diameter, and drive nails through the center, sinking the nail-head into the leather slightly. This would be a protection to the knife in extracting. I think it might be cheaper to have fiber washers made if a factory were using a quantity. C. R. DEWEY.

Dawson, Neb., Aug. 7.

[The fiber washer would certainly remove the objection usually urged against ordinary metallic spacers, namely, dulling the uncapping-knife. But this is an objection that I suspect exists more in theory than in actual practice.—Ed.]

CARBOLIC ACID AS A PREVENTIVE OF FOUL BROOD.

Last year foul brood prevailed here epidemically and severely. The county bee-inspector cleaned up, and this year the condition is much improved.

With new combs and ten-per-cent solution of carbolic acid which was introduced into the hive for evaporation, I kept foul brood out of the apiary. Is there any better preventive known to the bee-keeper? If so, I should like to know. Permanganate of potassium I suggested to our inspector, who declares it exterminates the disease germ, but I have never tried it.

Canon City, Colo. W. BABBERGER.

[The carbolic acid is all right to put into the syrup as a preventive of foul brood, but it must be used much stronger than is good for the bees to be at all destructive to the germs of that dread disease. Beta naphthol is not offensive, and, according to those who have tested it, it is more destructive to the microbes.—Ed.]

FEEDING MEDICATED SYRUP OUTDOORS.

I see you are using pretty much the same method I have used for ten years in outdoor feeding, also the same medicine (beta naphthol). It comes very handy to feed a little sometimes when clipping queens; but I think I can beat you all hollow for a cheap system and speed, especially if your neighbor has bees within 20 rods of your bees. I consider this the only way and proper time to get best results by getting the naphthol right into the empty brood-cells.

Molesworth, Ont. CHAS. MITCHELL.

[But you do not say *how* you could "beat us all out hollow" on a cheap system for outdoor feeding.—Ed.]

A GOOD HONEY-PLANT THAT BLOOMS ALL SUMMER.

I am sending you some flowers and branches of a little shrub or bush that grows in my yard, and which I have been told is called snowdrop. It began blooming, I think, a little after fruit-bloom, and it is in bloom yet. I am not sure, but I believe it blooms until frost. I have kept a close watch over it this spring and summer from daylight until dark, and I never look at the bush any time of the day without finding bees busy on the flowers. I don't know of any thing that will beat this little bush for keeping bees busy all day long. It will grow on rough rocky ground.

Velpen, Ind., June 2. W. T. DAVISON.

HOW TO MAKE A STEEL MAIL-BOX COOL ENOUGH FOR QUEENS.

I would advise Mr. Lew. W. Haines, page 727, to take some sharp instrument and perforate from the inside the approved letter-box which he has. By so doing he could secure sufficient ventilation for the safety of the queens. By perforating from the inside it would leave the interior of the box smooth, so as not to injure the hands in handling the mail. Substituting a wooden box would not be allowed by the Postoffice Department.

Chelsea, Mich. E. J. WHIPPLE.

QUERY.

Will the readers of GLEANINGS please inform me what the honey-producing plants and trees are in Eastern North Carolina, say from the coast to 25 miles inland? What is the usual production per colony? How long does the flow last? Of what quality is it? Any information through GLEANINGS, or direct to me, will be thankfully received.

Hillsboro, Ohio. W. R. L. DWYER.

[Those who are so situated are requested to answer.—Ed.]

A RECORD-BREAKING SWARM.

My first swarm came out the 28th day of April, and I had several others that swarmed the next week. On the 18th of June I had a swarm that weighed 17 pounds. I had to put them into the hive three times, then made up my mind they hadn't room enough, so I put on 48 boxes. The other day I was looking at them and they had them nearly ready to cap. I believe this swarm beats the prize swarm that was in GLEANINGS July 1. There is a very large crop of white clover this year, and bees are doing finely.

Sterling, Ill., July 7. J. A. ZIGLER.

GRADING HONEY.

In the issue for August 1 I notice Doolittle's conversation on grading honey. Does he take into consideration the quality of sections or of foundation used?

Lake Mills, Wis. HOMER C. STONE.

[The matter is referred to Mr. D.—Ed.]



DEATH OF DR. J. H. SALISBURY, AND HIS LIFE WORK.

Dr. Salisbury died on the 23d of July, at the age of 82. I have had a good deal to say about Dr. S. and his contribution to medical science along the line of the meat cure; and I wish to say again that it is my impression few physicians living or who have lived have done more to get right down to the *origin* of a lot of diseases that afflict humanity than has Dr. Salisbury. When he first took up this matter in Cleveland he made a great number of experiments extending through many years, and at his own expense. He furnished workmen board free of charge if they would take such food as he furnished, and no other. Then when his tests became more difficult he paid men wages to live as long as they could consistently on certain foods. When he was satisfied that certain kinds of indigestion could be cured by cutting off starch and sugar, he began extending his researches in regard to the effect of fruits and vegetables.

There is one very common malady that seems to prevail to such an extent, when fruit and vegetables get to be plentiful and cheap, that it has been called "summer complaint." Dr. Salisbury soon demonstrated that this trouble could be done away with entirely by a change of diet. Thousands of people have been restored to health and strength as the result of his discoveries. By the aid of the microscope in examining the blood and urine, he originated a course of treatment; but while his bright anticipations were not all realized, many wonderful recoveries followed along this line. The principal trouble seems to be that there are so many who get into the habit of eating daily great quantities of sweets and fruits, or perhaps we might say sweetened fruits, that they find it pretty hard to follow the Salisbury treatment. Several, to my knowledge, while admitting that he was right, or nearly so, said they would *rather* be sick than not have any thing "good to eat." One young man said he would rather die than to eat beefsteak all the rest of his life; and die he did a most painful death with diabetes. Others (and, I feel ashamed to say, myself among them) thought it would be a fine thing if they could find some kind of drug or "doctor's stuff" that would take the place of the narrow and disagreeable lean-meat diet, and then eat *what* you please and as *much* as you please. I have never found any such medicine, although several times I have got hold of something that would give temporary relief.

When you are on the lean-meat diet two things are accomplished: First, the lean meat *can not* ferment in the stomach and bowels, and produce yeast and a great quan-

tity of foul gases, and finally a putrefying mass that nature expels by a course of diarrhea, and finally, perhaps, dysentery. Secondly, when one is on the meat diet he never eats *too much*. A great many times eating sparingly and chewing the food well may take the place of the lean-meat diet. For instance, I am very fond of baked apples; but most people take them after eating a pretty good meal of something else. Now, baked apples with me, after a fair meal, will usually produce headache, distress during the night, and sometimes something worse,* while I can make a *whole meal* of baked apples, and nothing else, and get along all right; and the same is true of ever so many other things. Even beans, that distress me more than almost any thing, will be managed all right by the digestive organs if I eat nothing but dry bread with them and do not take too big a "dose." And hot maple sugar, which will make hundreds of people sick, if taken between meals (*especially* if taken in excess), will be managed all right by my digestive apparatus if I take it at my regular meal times, in a moderate quantity, with dry bread and nothing else. Not only machinery, but flesh and blood will do good work for a long time if you do not overload it; and it has been demonstrated pretty well by physicians and thousands of other people that you can do *more* work, and do it *easier*, by getting up from the table when you are still a little hungry, than to eat all you want and do it *three times a day*. Make the meals smaller or do not eat so often, and many people could find relief by doing both.

Now, do not jump to the conclusion that eating less is going to get you out of trouble if your digestive organs are once badly "out of kilter." Dozens of times, and I am almost tempted to say hundreds of times, I have said to Mrs. Root, "Sue, there is no use beating about the bush any longer. I am not going to get out of this fix until I come down to clean ground meat." And the lean meat alone has so far straightened out diarrhea or its culminating neighbor, dysentery. Usually after about 48 hours the meat diet gets me straight. When malarial fever sets in with the others it may take a week.†

* Some of our readers may inquire how I reconcile the above statement with what I said a few months ago about eating three or four good-sized apples just before going to bed. If you will remember, that was in January, and the apples I ate then were very mellow and ripe; and I am glad to say that at two different times of late I have been able to eat very ripe apples in the way mentioned, without any trouble at all. But during warm weather, say about the season of "summer complaint" mentioned above (July and August), I should have an attack of my old trouble, malarial fever; and when this comes on I have learned by sad experience that I have got to cut off square all fruit and sometimes all vegetables? When I am up at Grand Traverse Bay, as I have told you so many times, where malaria is unknown, I eat fruit and every thing else that other people do; and that is just the reason why I am away from home so much during the summer and fall.

† When I first became acquainted with Dr. Salisbury he made a remark something like this: "The meat-shop is a cheaper place than a doctor's shop." He meant by this that many people can be saved expensive doctor bills by patronizing a meat-market. It is true that a meat diet is, many times, more expensive than a vegetable diet, but not much more expensive than when you

But the greater part of the time, about three meals sets me right again; and very frequently dropping sugar in every shape, together with sweet or sweetened fruits, of *itself* gets me all right again. Now, a great many of our readers, as I know from the letters you send me, have proved this matter just as I have done; and yet it is one of the saddest and most saddening things that we meet (at least saddening to me) to see our health journals, or the greater part of them, hammering away on vegetarian diet for everybody indiscriminately. Lots of people, and I am glad to say my wife is among the crowd, could get along very well, and perhaps enjoy excellent health, on a vegetarian diet; but even she, when hovering between life and death, after an attack of pleuro-pneumonia, acknowledged that ground or scraped lean meat, without any question, saved her life.

Another sad thing is that there are quite a good many physicians who will have it that meat is *indigestible*, and not fit for a weak stomach. Such physicians had better acquaint themselves with Dr. Salisbury's experiments and with his life work. May God be praised that Dr. Salisbury was permitted to live and to call the attention of the whole wide world to the fact that thousands of valuable lives can be saved by cutting off a vegetable diet entirely for a sufficient time to let the digestive apparatus rest and recuperate.

We can furnish on application a little pamphlet entitled "Who is Dr. Salisbury? and what is his Treatment?"



CABIN IN THE WOODS; EARLY PEACHES.

When we planted our peach-trees around the "cabin," four years ago, I selected only early varieties because I supposed we should make this our home only in summer or early fall. I had two points in view — to make a test of the early and extra earlies, and to have a succession, one kind ripening after another. Well, when we reached here July 27 (see p. 875, Aug. 15) the Hale's Early were just coming up nicely; and, by the way, if this peach were not an edible fruit at all, I think it would be worth planting just for an

taste into consideration the cost of doctors and drugs. Yesterday, Sept. 5, my breakfast, dinner, and supper were all made from 1¼ lbs. of ground lean beef, which cost just 20 cents. I did not eat any thing else all day — not even a crumb of bread. All the dishes needed to serve this excellent repast — and it was excellent, too, because it was good meat — was just a fork and one plate. As I drank only hot water there was no expense (in "washing dishes") for a cup and saucer. The result is that to-day I feel as sweet and clean as a glass bottle that has been scalded outside and in with hot water. I could keep this diet up for a week or more without any particular inconvenience, for I have done so repeatedly when my digestion was impaired by malaria or otherwise.

ornamental tree. The trees around the cabin door had been pruned, mulched, and trained by my own hand; and when the limbs were bending gracefully, lower and lower every day with their loads of ruddy fruit, I never seemed to tire of admiring them. Austin Hale, the introducer of Hale's Early, was a near neighbor and intimate friend of my boyhood; and as the fruit began to ripen they seemed not only the finest peaches in the world, but I was tempted to call them the finest of all fruits. Mrs. Root declared it was largely due to the fact that I had fussed with the trees, and *loved* them (yes, *loved* is the word) every summer that made me so enthusiastic over the fruit. Of course, they are tenacious "clings" (at least they are here); and, besides, they are so full of "juice" one can hardly eat one without getting it all over his fingers and mouth, and possibly clothing also.

The next to ripen was Waterloo. This is larger, beautifully marked with both red and yellow, and a firm peach, but with white flesh.

Triumph ripens here about two weeks after Hale's Early; is much like it in color outside, but yellow flesh, and not nearly as watery as Hale's. The flesh is more meaty, and does not cling so tenaciously to the stone.

Prolific is about a week later still, large size, yellow flesh, and almost a freestone; and I should call it almost equal to any of the best late peaches.

All the above early peaches have the disagreeable habit, more or less, of beginning to rot just as they begin to ripen, or a little before. Many fine peaches will be hard on one side, just right to eat on the other, and a rotten spot in the center of the soft side. When this peculiar rot starts it takes the whole peach very quickly. A neighbor picked a lot just right to can, put them in the cellar to wait until next day; but when next day came the most of them were too far gone to use. Hale's Early presents a beautiful appearance canned whole; and where one is pressed for time, even the peeling can be left on.

BEEES AND PEACHES.

When this rot starts so suddenly, when the peach is just softening on one side, bees and other insects are apt to be accused of destroying the peaches; and no wonder the bees consider it quite a "find," for a Hale's Early peach is almost as sweet as sugar, and a more "entrancing" sweetness than any sugar ever invented or discovered. The bees have not troubled ours; but a large black ant would get inside just where (and when) the rot started, and in a very short time there would be a big cavity filled with ants. When I attempted to drive them out and off they bit my hands viciously. Had I not known about bees and early peaches I might have claimed the *ants* were destroying all my nice fruit. I think most fruitmen are now posted in regard to this matter, as we hear little of late in regard to bees destroying fruit.

EVERBEARING MULBERRIES.

A neighbor has a couple of mulberry-trees that have been furnishing ripe fruit since July, and will, no doubt, give nice fruit until October. The berries are much larger now than they were earlier. The birds do not take them now; but it is probably because there is such an abundance of wild blackberries all over the hills that there are not "birds enough to go round." In Ohio we have a large tree of Downing's Everbearing; but the robins are so constantly on hand we never get a real *ripe* berry—at least we have not this season. There are all the time large fine green berries; but just as soon as they fairly color, the birds take them. The only way we could get any real ripe June berries this season, as well as last, was to cover the bushes with mosquito-netting; but that would be a pretty big job for a big tree, mulberry or cherry.

HAY FEVER AND ASTHMA — CHANGE OF LOCALITY, ETC.

When we returned here, Sept. 8, the manager of our Ohio apiaries, Mr. Mel. Pritchard, came with us. He has for years had the hay fever every fall; and this time when he left home he had not been able to sleep in a bed for ten days. All the sleep he could get was by sitting in a chair, with his head on a table in front of him. When he got here, as it was quite warm we fixed him up in the hammock under the maple-trees. He slept all night nicely, and has slept all right in a bed every night since, a little over a week. Now, isn't this a big testimonial for this region as a health resort? It looks so; but we should look closely on all sides of cases like this. I took him over the hills and through the woods, and this would likely be a large factor in the matter. A year ago he went to St. Louis and got relief. The fields of Northern Ohio are at this season covered with ragweed in full bloom; and many people, and some physicians among them, think this causes hay fever. There is none of it in this locality.

Another puzzling thing comes in here. There are bad cases of asthma in this locality, and several have got relief by going to Oregon, California, and other places. Are we to understand from this that a *change of locality* is often beneficial? In August I had so much trouble with what I called malaria I tried the lean meat and every thing I knew of, and finally decided there was no way but to get back here. When I took "Mel" over the hills until I tired him out (he is 40 and I 65) he got over his asthma. I was clear of the malaria, as if by magic; and yet right in the face of this two of our neighbors are suffering from malarial fever, or at least they say they are. If it is the beautiful spring water that flows from the base of these sandy hills that improves my digestion, so I eat every thing with impunity, why doesn't it work the same way with old residents? Is it possible that a change of *drinking-water* is often beneficial, just as a change of air sometimes works wonders? May the

kind Father above guide and give us wisdom in all these perplexing matters pertaining to health.

MUSHROOMS FOR FOOD, ETC.

Mel has always been a great lover of the woods, fields, etc., and he is quite a hand to hunt and fish. Mushrooms are quite a hobby of his, and he has been having some correspondence with the Department at Washington in regard to the edible fungi of our country. The first day we were out he spied what I have always called "puffball" mushrooms, and by his direction we peeled and sliced them, and fried them in butter about as you would eggs. While frying they gave out a most appetizing odor that made me sure I should like them; and, sure enough, I found them more delicious than any kind of meat, oysters, fish, or any thing of the kind. These mushrooms are especially recommended by the Department at Washington, because there is no poisonous variety nor any thing like them. You will find them in old rich pastures, about the size of a goose egg or larger, and just about as white and smooth. When broken open they look like very white flour. When they get so old as to look dark inside they are strong and unpleasant, but not poisonous. They are often so plentiful that the boys pelt each other with them, and call it snowballing in the summer time. In cooking them use plenty of salt as well as butter, and a little pepper.



He which converteth the sinner from the error of his way shall save a soul from death, and shall hide a multitude of sins.—JAMES 5:20.

On p. 947 Dr. Miller calls our attention to a matter I had never considered particularly before. By all means have the children converted and brought into the church, even at the early age of ten years, if it can be done; but when the question arises as to how we shall use our strength, energies, and *influence*, whether with the children mostly, or with older people it were well to consider a little. There are those who openly advocate the practice of letting old sinners go and bestowing our labors on the youth who are not yet hardened, and where it will do some good. Here in Bingham, as I have told you, the church was almost "gone to pieces." All had backslidden, at least all the male members had, and only a small handful of women called themselves church-members. These women and children kept up the Sunday-school, and made the congregation at preaching service every other Sunday. The first to come forward at our recent revival services were the younger ones. Now, was I making any mistake when I prayed and labored to get some full-grown men among the converts as well as

the children? One man whom I had plead with until he was almost vexed, finally, to my great surprise, came forward one evening at the very first invitation, and before anybody else. The next night he came just as promptly again, and in his testimony said something like this:

"Dear friends, I have got through one day, the first in years, without a single bad word. I feel better and happier. I do not think I shall ever want to turn back. I am sure I am getting on 'higher ground.' Pray for me."

This man is on hand at every meeting, always takes part, and there are *toward a dozen* big broad-shouldered men just like him. They are not only "broad-shouldered," but they are men of influence in the community. These men have been baptized, and are members of the church. Now, dear brother Dr. Miller, was it not our duty to work and pray a little harder for these men? At present writing thirty have been baptized, and quite a few more have united with the church who have been baptized at some time in the past.

One grand thing about this revival is that the work seems to go right on just about the same (as it does in Wales), when the good pastor is not with us. He is now holding meetings in another parish, but we have a weekly prayer-meeting every Wednesday evening. At these meetings all are on hand; and last evening, besides the prayers, twenty-one stood up and bore testimony, telling how they were getting on in the new life. I hope I am mistaken; but I have always feared that a child of ten hardly realizes what it undertakes, and might change its mind as it grows older; whereas a man of thirty or forty is not very likely to backslide. With big strong men to take the lead, the young ones are very much less likely to go back; in fact, they will hardly ever go back if they are properly looked after. The dear Savior said to Peter, "Feed my lambs," and there is need of a whole lot of Peters. Our pastor is preaching in four different places, and he says he expects a work like this here in each of the four places. He is going to preach to them every night for three or four weeks. Somebody noticed his harness was getting old, and the money was raised for a new one in a twinkling; and as I write a project is on foot to get him an extra horse. This whole community is now a unit in showing to each other the spirit of Christ Jesus.

LOOK OUT FOR SWINDLERS WHEN YOU PATRONIZE BARBER-SHOPS AWAY FROM HOME.

While waiting for the train in Union Station, Detroit, I went into the station barber-shop to have my hair cut. The very obliging barber asked a good many questions about how I wanted my hair and whiskers trimmed, etc. I replied in a general way to fix me up in good shape, using his own

judgment, etc. When he got nearly through he made the remark that some of my eyebrows were rather long, and asked if they ever troubled me by getting in my eyes. I told him they did, especially in a strong wind or when riding in the automobile. He said he had a way of singeing them that would prevent all that, and rather improve my appearance at the same time. Then he mentioned some spots on my face that he could remove in a very few minutes. I thought once of asking him what these things were going to cost; but finally, supposing it would be only a few cents any way, I let the matter drop. As I had a shampoo as well as a hair-cut I thought the price would be 50 or 60 cents. Imagine my surprise when he said the price was \$1.60. I was going to protest; then I remembered his various questions about this, that, and the other thing, and that he really had my sanction, although I did not think of it at the time. So I paid the bill. When I got home I asked our home barber what he knew about this new species of "graft." He said it is getting to be quite common. Three of our townsmen have been swindled in a similar way. One was charged \$1.80 and another one \$1.85 when they supposed the bill would be only 30 or 40 cents. In Columbus they tried the game on one of our Medina lawyers, but he refused to pay the exorbitant charge, and demanded to see the proprietor of the establishment. The barber reluctantly admitted that it belonged to the hotel where he was stopping; but before the barber would consent to having the matter referred to the hotel management he accepted the usual price for the service he had given.

I have narrated this little transaction because I think it may save the readers of GLEANINGS from getting bitten in a similar way. The game is usually worked on somebody who is not likely to be a customer in the future. He found out that I was traveling, and I was foolish enough to let him know that I used an automobile; and he inferred from this that I would not *mind* being swindled out of a dollar if he went about it carefully.

Now, let us unite in sitting down promptly on all such modern methods of swindling. Find out beforehand what every thing is going to cost, especially in a strange place; and then let us imitate our beloved President by insisting on a "square deal" every day in the week.

I presented the matter to one of the officers of the Pere Marquette R. R., and they informed me that this barber has just been dismissed from the station for the very offense I have mentioned.

I WILL BUY

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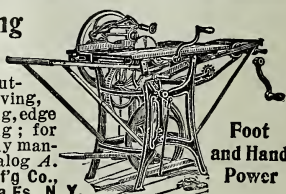
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